Grade 12 Psychology (40S)

A Course for Independent Study

Manitoba

GRADE 12 PSYCHOLOGY (40S)

A Course for Independent Study

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Available in alternate formats upon request.

C O N T E N T S

Module 5: Variations in Individual and Group Behaviour   1

Bibliography   1

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INTRODUCTION

Overview

Welcome to Grade 12 Psychology!

Psychology is the scientific study of behaviour and mental processes. It uses the scientific method to discover ways of understanding the complexities of human thought and behaviour, as well as differences among people.

As a student in a course for distance learning, you have taken on a dual role—that of a student and a teacher. As a student, you are responsible for mastering the lessons and completing the learning activities and assignments. As a teacher, you are responsible for checking your work carefully, noting areas in which you need to improve, and motivating yourself to succeed.

What Will You Learn in This Course?

Studying psychology will provide you with lifelong skills such as dealing with issues proactively, solving problems, learning, and nurturing healthy relationships. It will also help you understand yourself and deal with issues in your own life such as inner conflicts, relationships with your parents and peers, and intimacy. As well, it will help you to understand societal problems like drug dependency, aggression, and discrimination.

This course exposes you to the major topics found in the field of psychology. It also emphasizes the issues that are of particular interest and relevance to students completing high school. You will explore the scientific methods upon which psychology is based and will then be able to apply what you learn to your daily life.

How Is This Course Organized?

In each lesson, you will read a few pages and then complete a learning activity or assignment. Some lessons may require you to do some investigative research or observation work in the community. This course consists of the following five modules:

Module 1: Introduction to Psychology and Research Methods

Module 2: Biopsychological Theme

Module 3: Developmental Psychology

Module 4: Cognitive Psychology

Module 5: Variations in Individual and Group Behaviour

Each module in this course consists of several lessons, which contain the following components:

- **Introduction:** Each lesson begins by telling you what you will be learning.
- **Lesson:** The main body of the lesson is made up of the content that you need to learn. It contains explanations, diagrams, and fully completed examples.
- **Summary:** Each lesson ends with a brief review of what you just learned.
- **Learning Activities:** Many lessons include a Learning Activity that will help you learn about the lesson topics and prepare you for the assignments, the midterm examination, and the final examination. Once you have completed a learning activity, you should check your answers with the answer key found at the end of the applicable module.
- **Assignments:** Assignments are found at the end of lessons. In total, all assignments are worth 60% of your final course mark. You will submit your completed assignments to the Distance Learning Unit for assessment.

Sensitive Content

Some of the content and issues pertaining to the course may be sensitive for some students and their parents/families and/or communities. This sensitive content is contained in Module 4—Topic 4, Lesson 8 (Drugs and Dependency) and Module 5.

Psychology is a complex subject area. The material in this course is general in nature and is not intended to be applied to specific situations. If, after reading material from this course, you have questions or concerns, please seek further information from a physician, professional counselor, or other support services.

What Resources Will You Need for This Course?

You do not need a textbook for this course. All the content is provided directly within the course. You will, however, need access to a variety of resources.

Required Resources

You will require access to an email account if you plan to

■ communicate with your tutor/marker by email

■ use the learning management system (LMS) to submit your completed assignments

Optional Resources

It would be helpful if you had access to the following resources:

■ **A photocopier/scanner:** With access to a photocopier/scanner, you could make a copy of your assignments before submitting them so that if your tutor/marker wants to discuss an assignment with you over the phone, each of you will have a copy. It would also allow you to continue studying or to complete further lessons while your original work is with the tutor/marker. Photocopying or scanning your assignments will also ensure that you keep a copy in case the originals are lost.

■ **Resource people:** Access to local resource people, such as teachers, school counsellors, and librarians, would help you complete this course.

■ **A computer with word processing and presentation software:** Access to word processing software (e.g., Microsoft Word) and presentation and slide software (e.g., Microsoft PowerPoint) would help you complete some assignments.

Who Can Help You with This Course?

Taking an independent study course is different from taking a course in a classroom. Instead of relying on the teacher to tell you to complete a learning activity or an assignment, you must tell yourself to be responsible for your learning and for meeting deadlines. There are, however, two people who can help you be successful in your course: your tutor/marker and your learning partner.

Your Tutor/Marker

Tutor/Markers are experienced educators who tutor independent students and mark assignments and examinations. When you are having difficulty with something in this course, be sure to contact your tutor/marker, who is there to help you. Your tutor/marker's name and contact information were sent to you with this course. Your tutor/marker information is also available in the learning management system (LMS).

Your Learning Partner

A learning partner is someone **you choose** who will help you learn. It may be someone who knows something about psychology, but it doesn't have to be. A learning partner could be someone else who is taking this course, a teacher, a parent or guardian, a sibling, a friend, or anybody else who can help you. Most importantly, a learning partner should be someone with whom you feel comfortable, and who will support you as you work through this course.

Your learning partner can help you keep on schedule with your course work, read the course with you, check your work, look at and respond to your learning activities, or help you make sense of assignments. You may even study for your examinations with your learning partner. If you and your learning partner are taking the same course, however, your assignment work should not be identical.

How Will You Know How Well You Are Learning?

You will know how well you are learning in this course by how well you complete the learning activities, assignments, and examinations

Learning Activities

The learning activities in this course will help you to review and practise what you have learned in the lessons. You will not submit the completed learning activities to the Distance Learning Unit. Instead, you will complete the learning activities and compare your responses to those provided in the Learning Activity Answer Key found at the end of each module.

Make sure you complete the learning activities. Doing so will not only help you to practise what you have learned, but will also prepare you to complete your assignments and the examination(s) successfully. Many of the questions on the examination(s) will be similar to the questions in the learning activities. Remember that you **will not submit learning activities to the Distance Learning Unit**.

Assignments

Each module in this course contains assignments, which you will complete and submit to the Distance Learning Unit for assessment. The assignments are worth a total of 60 percent of your final course mark.

The tutor/marker will mark your assignments and return them to you. Remember to keep all marked assignments until you have finished the course so that you can use them to study for your examinations.

Midterm and Final Examinations
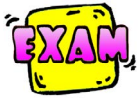
The course contains a midterm examination and a final examination.

- The **midterm examination** is based on Modules 1 to 3, and is worth 20 percent of your final mark in this course. You will write the midterm examination when you have completed Module 3.

- The **final examination** is based on Modules 4 and 5 and is worth 20 percent of your final mark in this course. You will write the final examination when you have completed Module 5.

The two examinations are worth a total of 50 percent of your final course mark. You will write both examinations under supervision.

To do well on each examination, you should review all the work you have completed from the modules, including all learning activities and assignments.

Practice Examinations and Answer Keys

To help you succeed in your examinations, you will have an opportunity to complete a Midterm Practice Examination and a Final Practice Examination. These examinations, along with the answer keys, are found in the learning management system (LMS). If you do not have access to the Internet, contact the Distance Learning Unit at 1-800-465-9915 to obtain a copy of the practice examinations.

These practice examinations are similar to the actual examinations you will be writing. The answer keys enable you to check your answers. This will give you the confidence you need to do well on your examinations.

Requesting Your Examination(s)

You are responsible for making arrangements to have the examinations sent to your proctor from the Distance Learning Unit. Please make arrangements before you finish Module 3 to write the midterm examination. Likewise, you should begin arranging for your final examination before you finish Module 5.

To write your examinations, you need to make the following arrangements:

- **If you are attending school,** your examination will be sent to your school as soon as all the applicable assignments have been submitted. You should make arrangements with your school's Independent Study Option (ISO) school facilitator to determine a date, time, and location to write the examination.

- **If you are not attending school,** check the **Examination Request Form** for options available to you. Examination Request Forms can be found on the Distance Learning Unit's website, or look for information in the learning management system (LMS). **Two weeks before** you are ready to write the examination, fill in the Examination Request Form and mail, fax, or email it to

  Distance Learning Unit
  500–555 Main Street
  P.O. Box 2020
  Winkler, MB R6W 4B8
  Fax: 204-325-1719
  Toll-Free Telephone: 1-800-465-9915
  Email: distance.learning@gov.mb.ca

How Much Time Will You Need to Complete This Course?

Learning through independent study has several advantages over learning in the classroom. You are in charge of how you learn and you can choose how quickly you will complete the course. You can read as many lessons as you wish in a single session. You do not have to wait for your teacher or classmates.

From the date of your registration, you have a maximum of **12 months** to complete this course, but the pace at which you proceed is up to you. Read the following charts for suggestions on how to pace yourself.

Chart A: Semester 1

If you want to start the course in September and complete it in January, you can follow the timeline suggested below.

Module	Completion Date
Module 1	End of September
Module 2	End of October
Module 3	Middle of November
Midterm Examination	End of November
Module 4	End of December
Module 5	Middle of January
Final Examination	End of January

Chart B: Semester 2

If you want to start the course in February and compete it in May, you can follow the timeline suggested below.

Module	Completion Date
Module 1	Middle of February
Module 2	End of February
Module 3	Middle of March
Midterm Examination	End of March
Module 4	Middle of April
Module 5	End of April
Final Examination	Middle of May

Chart C: Full School Year (Not Semestered)

If you want to start the course in September and compete it in May, you can follow the timeline suggested below.

Module	Completion Date
Module 1	End of September
Module 2	End of October
Module 3	End of November
Midterm Examination	End of January
Module 4	Beginning of March
Module 5	Middle of April
Final Examination	Middle of May

Timelines

Do not wait until the last minute to complete your work, since your tutor/marker may not be available to mark it immediately. It may take a few weeks for your tutor/marker to assess your work and return it to you.

If you need this course to graduate this school year, all coursework must be received by the Distance Learning Unit on or before the first Friday in May, and all examinations must be received by the Distance Learning Unit on or before the last Friday in May. Any coursework or examinations received after these deadlines may not be processed in time for a June graduation. Assignments or examinations submitted after these recommended deadlines will be processed and marked as they are received.

When and How Will You Submit Completed Assignments?

When to Submit Assignments

While working on this course, you will submit completed assignments to the Distance Learning Unit five times. The following chart shows you exactly what assignments you will be submitting at the end of each module.

Submission	Assignments You Will Submit
1	■ **Module 1 Cover Sheet** ■ Assignment 1.1: Research in Psychology ■ Assignment 1.2: Which Design Would You Choose? ■ Assignment 1.3: Correlation Study Analysis ■ Assignment 1.4: Experimental Design ■ Assignment 1.5: Ethical or Not
2	■ **Module 2 Cover Sheet** ■ Assignment 2.1: Brain Injury ■ Assignment 2.2: Nature versus Nurture ■ Assignment 2.3: Senses: Windows to the World ■ Assignment 2.4: Applying Gestalt's Principles ■ Assignment 2.5: Theories of Motivation ■ Assignment 2.6: Stress
3	■ **Module 3 Cover Sheet** ■ Assignment 3.1: Parenting Patterns ■ Assignment 3.2: Development throughout the Life Cycle ■ Assignment 3.3: Defense Mechanisms
4	■ **Module 4 Cover Sheet** ■ Assignment 4.1: Applying Classical Conditioning ■ Assignment 4.2: Applying Learning to Your Life ■ Assignment 4.3: What's their Name? ■ Assignment 4.4: Sleeping Case Study ■ Assignment 4.5: Gardner's Theory of Multiple Intelligences
5	■ **Module 5 Cover Sheet** ■ Assignment 5.1: Psychological Disorder Analysis ■ Assignment 5.2: Psychological Disorders Case Study ■ Assignment 5.3: Social Relations

How to Submit Assignments

In this course, you have the choice of submitting your assignments either by mail or electronically.

- **Mail:** Each time you **mail** something, you must include the print version of the applicable Cover Sheet (found at the end of this Introduction). Complete the information at the top of each Cover Sheet before submitting it along with your assignments.

- **Electronic submission:** You do not need to include a cover sheet when submitting assignments electronically.

Submitting Your Assignments by Mail

If you choose to mail your completed assignments, please photocopy all the materials first so that you will have a copy of your work in case your package goes missing. You will need to place the applicable module Cover Sheet and assignment(s) in an envelope, and address it to

Distance Learning Unit
500–555 Main Street
P.O. Box 2020
Winkler MB R6W 4B8

Your tutor/marker will mark your work and return it to you by mail.

Submitting Your Assignments Electronically

Assignment submission options vary by course. Sometimes assignments can be submitted electronically and sometimes they must be submitted by mail. Specific instructions on how to submit assignments were sent to you with this course. In addition, this information is available in the learning management system (LMS).

If you are submitting assignments electronically, make sure you have saved copies of them before you send them. That way, you can refer to your assignments when you discuss them with your tutor/marker. Also, if the original hand-in assignments are lost, you are able to resubmit them.

Your tutor/marker will mark your work and return it to you electronically.

The Distance Learning Unit does not provide technical support for hardware-related issues. If troubleshooting is required, consult a professional computer technician.

What Are the Guide Graphics For?

Guide graphics are used throughout this course to identify and guide you in specific tasks. Each graphic has a specific purpose, as described below.

Learning Activity: Complete a learning activity. This will help you to review or practise what you have learned and to prepare for an assignment or an examination. You will not submit learning activities to the Distance Learning Unit. Instead, you will compare your responses to the Learning Activity Answer Keys found at the end of the applicable module.

Assignment: Complete an assignment. You will submit your completed assignments to the Distance Learning Unit for assessment. You will be submitting your assignments at the end of every module.

Mail or Electronic Submission: Mail or electronically submit your completed assignment(s) to the Distance Learning Unit for assessment at this time.

Learning Partner: Ask your learning partner to help you with this task.

Examination: Write your midterm or final examination at this time.

Check Your Work: Check your responses against those provided in the Learning Activity Answer Key found at the end of the applicable module.

Phone or Email: Telephone or email your tutor/marker.

Remember: If you have questions or need help at any point during this course, contact your tutor/marker or ask your learning partner for help.

Good luck with the course!

Notes

GRADE 12 PSYCHOLOGY (40S)

Module 1 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address	**Mailing Address**
Distance Learning Unit	Distance Learning Unit
555 Main Street	500–555 Main Street
Winkler MB R6W 1C4	PO Box 2020
	Winkler MB R6W 4B8

Contact Information

Legal Name: _____   Preferred Name: _____

Phone: _____   Email: _____

Mailing Address: _____

City/Town: _____   Postal Code: _____

Attending School: ❏ No   ❏ Yes

School Name: _____

Has your contact information changed since you registered for this course?   ❏ No ❏ Yes

Note: Please keep a copy of your assignments so that you can refer to them when you discuss them with your tutor/marker.

For Student Use	For Office Use Only	
Module 1 Assignments	**Attempt 1**	**Attempt 2**
Which of the following are completed and enclosed? Please check (✓) all applicable boxes below.	_____	_____
	Date Received	Date Received
❏ Assignment 1.1: Research in Psychology	_____ /16	_____ /16
❏ Assignment 1.2: Which Design Would You Choose?	_____ /9	_____ /9
❏ Assignment 1.3: Correlation Study Analysis	_____ /9	_____ /9
❏ Assignment 1.4: Experimental Design	_____ /14	_____ /14
❏ Assignment 1.5: Ethical or Not?	_____ /8	_____ /8
	Total: ____ /56	Total: ____ /56
For Tutor/Marker Use		
Remarks:		

Grade 12 Psychology (40S)

Module 2 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address	**Mailing Address**
Distance Learning Unit	Distance Learning Unit
555 Main Street	500–555 Main Street
Winkler MB R6W 1C4	PO Box 2020
	Winkler MB R6W 4B8

Contact Information

Legal Name: _____   Preferred Name: _____

Phone: _____   Email: _____

Mailing Address: _____

City/Town: _____   Postal Code: _____

Attending School: ❏ No   ❏ Yes

School Name: _____

Has your contact information changed since you registered for this course?   ❏ No ❏ Yes

Note: Please keep a copy of your assignments so that you can refer to them when you discuss them with your tutor/marker.

For Student Use		For Office Use Only	
Module 2 Assignments		**Attempt 1**	**Attempt 2**
Which of the following are completed and enclosed? Please check (✓) all applicable boxes below.		_____ Date Received	_____ Date Received
❏ Assignment 2.1: Brain Injury		_____ /9	_____ /9
❏ Assignment 2.2: Nature versus Nurture		_____ /10	_____ /10
❏ Assignment 2.3: Senses: Windows to the World		_____ /15	_____ /15
❏ Assignment 2.4: Applying Gestalt's Principles		_____ /5	_____ /5
❏ Assignment 2.5: Theories of Motivation		_____ /12	_____ /12
❏ Assignment 2.6: Stress		_____ /8	_____ /8
		Total: ____ **/59**	Total: ____ **/59**
For Tutor/Marker Use			
Remarks:			

GRADE 12 PSYCHOLOGY (40S)

Module 3 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address	**Mailing Address**
Distance Learning Unit	Distance Learning Unit
555 Main Street	500–555 Main Street
Winkler MB R6W 1C4	PO Box 2020
	Winkler MB R6W 4B8

Contact Information

Legal Name: _____   Preferred Name: _____

Phone: _____   Email: _____

Mailing Address: _____

City/Town: _____   Postal Code: _____

Attending School: ❏ No   ❏ Yes

School Name: _____

Has your contact information changed since you registered for this course?   ❏ No ❏ Yes

Note: Please keep a copy of your assignments so that you can refer to them when you discuss them with your tutor/marker.

For Student Use		For Office Use Only	
Module 3 Assignments		**Attempt 1**	**Attempt 2**
Which of the following are completed and enclosed? Please check (✓) all applicable boxes below.		_____ Date Received	_____ Date Received
❏ Assignment 3.1: Parenting Patterns		_____ /12	_____ /12
❏ Assignment 3.2: Development throughout the Life Cycle		_____ /12	_____ /12
❏ Assignment 3.3: Defense Mechanisms		_____ /12	_____ /12
		Total: ____ **/36**	Total: ____ **/36**
For Tutor/Marker Use			
Remarks:			

GRADE 12 PSYCHOLOGY (40S)

Module 4 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address	**Mailing Address**
Distance Learning Unit	Distance Learning Unit
555 Main Street	500–555 Main Street
Winkler MB R6W 1C4	PO Box 2020
	Winkler MB R6W 4B8

Contact Information

Legal Name: _____   Preferred Name: _____

Phone: _____   Email: _____

Mailing Address: _____

City/Town: _____   Postal Code: _____

Attending School: ❏ No   ❏ Yes

School Name: _____

Has your contact information changed since you registered for this course?   ❏ No ❏ Yes

Note: Please keep a copy of your assignments so that you can refer to them when you discuss them with your tutor/marker.

For Student Use		For Office Use Only	
Module 4 Assignments		**Attempt 1**	**Attempt 2**
Which of the following are completed and enclosed? Please check (✓) all applicable boxes below.		_____ Date Received	_____ Date Received
❏ Assignment 4.1: Applying Classical Conditioning		_____ /22	_____ /22
❏ Assignment 4.2: Applying Learning to Your Life		_____ /20	_____ /20
❏ Assignment 4.3: What's Their Name?		_____ /14	_____ /14
❏ Assignment 4.4: Sleeping Case Study		_____ /5	_____ /5
❏ Assignment 4.5: Gardner's Theory of Multiple Intelligences		_____ /16	_____ /16
		Total: ___ **/77**	**Total:** ___ **/77**
For Tutor/Marker Use			
Remarks:			

Grade 12 Psychology (40S)

Module 5 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address

Distance Learning Unit
555 Main Street
Winkler MB R6W 1C4

Mailing Address

Distance Learning Unit
500–555 Main Street
PO Box 2020
Winkler MB R6W 4B8

Contact Information

Legal Name: _____   Preferred Name: _____

Phone: _____   Email: _____

Mailing Address: _____

City/Town: _____   Postal Code: _____

Attending School: ❏ No   ❏ Yes

School Name: _____

Has your contact information changed since you registered for this course?   ❏ No ❏ Yes

Note: Please keep a copy of your assignments so that you can refer to them when you discuss them with your tutor/marker.

For Student Use	For Office Use Only	
Module 5 Assignments	**Attempt 1**	**Attempt 2**
Which of the following are completed and enclosed? Please check (✓) all applicable boxes below.	_____ Date Received	_____ Date Received
❏ Assignment 5.1: Psychological Disorder Analysis	_____ /18	_____ /18
❏ Assignment 5.2: Psychological Disorders Case Study	_____ /10	_____ /10
❏ Assignment 5.3: Social Relations	_____ /10	_____ /10
	Total: ____ **/38**	**Total:** ____ **/38**
For Tutor/Marker Use		
Remarks:		

Module 1

Introduction to Psychology and Research Methods

L ESSON 1: W HAT IS P SYCHOLOGY?

Lesson Introduction

The purpose of this lesson is to introduce you to the field of psychology. To that end, we begin the lesson by defining psychology and its goals and we end it with a brief description of the different types of psychologists and the various career opportunities that exist.

Defining Psychology

People of every profession are faced with certain stereotypes or misconceptions. For instance, if you are introduced to a doctor you might ask for free medical advice, while if you meet a police officer you might ask about the crimes in a given area. Likewise, if you meet a psychologist, you might wonder if he or she is analyzing you. It is a common misconception that all psychologists are therapists waiting to analyze you. The truth is that many psychologists are not therapists: some are researchers, some are teachers, and some are consultants to business and industry.

Psychology is often thought of as a helping profession. It includes community involvement in help lines, crisis centres, and shelters, as well as testing students in schools, designing special education programs, and providing assistance to the legal system. It also includes marriage counselling, addiction counselling, and helping people cope with terminal illness.

So what is **psychology**? Psychology is defined as the scientific study of behaviour and mental processes. Psychologists investigate what people do, as well as their thoughts, feelings, perceptions, reasoning processes, and memories. They also investigate the biological bases of these processes.

The field of psychology relies upon the scientific method to discover ways of explaining, predicting, modifying, and improving behaviour. The study of behaviour and mental processes involves examining both animal and human subjects.

Behaviour can be either overt or covert. **Overt behaviour** is anything a person does that you can see, while **covert behaviour** is internal or hidden from view and cannot be observed by others. Think about the following behaviours and determine whether they are examples of overt behaviour or covert behaviour.

- Watching: Overt
- Thinking: Covert
- Being sad: Covert

- Wondering: Covert
- Blinking: Overt
- Imitating: Overt
- Remembering: Covert

Now that you know what psychology is, let's look at what psychology hopes to achieve; in other words, the goals of psychology.

The Four Goals of Psychology

As a science, psychology has some important goals. Psychologists gather information (data) in order to attain one or more of the following goals:

1. Description

Description involves making a detailed record of behavioural observations and organizing the information for future research.

Like any other science, psychology must observe and record facts in order to understand what is happening. It is sometimes difficult to achieve an **objective** description of behaviour because human behaviour is very complex. To describe behaviour objectively, psychologists must distinguish between what is actually observed and what a person might infer or assume from witnessing a situation. When you **infer**, you interpret data from a personal point of view. The opposite of objective is **subjective**. This is when you add your own point of view when interpreting data.

In this course, you will learn that psychology is a science and that it follows the same scientific processes that other sciences follow.

For example, in an actual observation the psychologist would say, "The person jumped up and down, smiled, and laughed." In an inferred observation the psychologist would say, "The person was happy." Suppose you wanted to determine how happy an individual was based solely on a photograph. You must objectively report your observations. This may include whether or not the person is smiling, and how much of a curve there is in the smile.

2. Explanation

Explanation involves being able to identify the causes of behaviour. Psychologists look for regular patterns in behaviour and mental processes. This helps researchers state the causes and tells us why a given event or behaviour occurred. But researchers do not reach the goal of explanation until their results have been tested, retested, and confirmed. They do this by eliminating or ruling out other explanations.

For example, psychologists might want to explain why you laugh at certain events and not at others. Another example might be to explain why some people get good grades in Psychology while others do not.

3. Prediction

Prediction involves forecasting behaviour reliably.

Through psychology, we seek to know the future regarding behaviour as we attempt to predict and prepare for events before they happen. This happens when the researcher has identified all the prior conditions that are required for a behaviour or event to occur. He or she can then predict the behaviour or event.

If, for example, we believe that your friend is shy, we could predict that your friend would be uncomfortable having a conversation with a stranger. As such, if we know that meeting a stranger produces anxiety, can we predict what would happen if the stranger were of a different species?

4. Control

Control involves altering conditions that influence behaviour in predictable ways. It is accomplished when researchers know how to apply a principle or change a condition to prevent unwanted occurrences or to bring about desired outcomes. Control means making behaviour happen or not happen. It involves starting it; maintaining it; stopping it; and influencing its form, strength, or rate of occurrence.

An example would be to determine how a smoker, who wants to live a long, healthy life, could go about the behavioural task of quitting smoking. Each factor that contributes to smoking must be recognized (such as oral satisfaction, nicotine addiction, and sexy attitude) and met with an opposing factor in order for the individual to overcome the habit.

The **four goals of psychology** are the description, explanation, prediction, and control of behaviour and mental processes. Psychological researchers always seek to attain one or more of these goals when they plan and conduct their studies. In the next section of this lesson, you will learn how people become psychologists and the many career opportunities that are available.

It is now time for you to complete the first learning activity. It is located on the following page. Make sure that you carefully complete this learning activity as well as all others. These will help you review what you have learned and prepare you to write your exams. Remember, you do **not** send in your learning activities to the Distance Learning Unit.

Learning Activity 1.1: Goals of Psychology

Read the following scenarios and determine to which of the four goals of psychology each one corresponds. Remember that the four goals are description, explanation, prediction, and control. Write your answer in the space after each statement.

1. A daycare worker has developed a teaching program that increases each child's self-esteem. _____

2. The members of student council want to know why students don't want to go to school dances. _____

3. As the manager at the local fast-food restaurant, you must interview high school students for a job opening using the questions that the head office has given you. _____

4. As part of your Family Studies course, you are asked to observe a two-year-old child through a one-way mirror as he or she interacts with a roomful of toys. You document how many toys the child plays with and the length of time spent with each toy. _____

5. Researchers have recently identified a gene that predisposes certain individuals to obesity. _____

6. Some psychologists believe that more playground accidents occur among young children who watch violent cartoons. _____

7. Studies demonstrate that Family Life education programs in high school should be mandatory because this type of education has led to reduced teenage pregnancy rates. _____

8. Surveys show that women who graduate from college earn as much money per year as men who graduate from high school. _____

Check the answer key found at the end of this module.

Studying Psychology

If you study psychology, you can obtain an undergraduate (bachelor's) degree in psychology. This can be useful because students with this degree may obtain graduate degrees in fields like business, law, and social work, in addition to psychology. However, in order to become a psychologist, a graduate degree is required. This means that after completing your undergraduate degree you must continue your university studies. There are three common graduate degrees.

1. Masters degree (M.A.)
2. Doctor of Psychology (Psy.D.)
3. Doctor of Philosophy in Psychology (Ph.D.)

Psychologists are not the same as psychiatrists. Psychiatrists are medical doctors who specialize in psychiatry. Of the two, only psychiatrists can prescribe drugs.

Psychologists at Work

The following table lists some specialties (subfields) within the field of psychology as well as some of the typical activities for each.

Specialty	Typical Activities
Clinical Psychology	Providing therapy, researching, teaching, writing, and helping people with behavioural or mental disorders
Counselling Psychology	Helping people with problems pertaining to everyday life such as marital problems, school problems, and family crises
Educational Psychology	Teaching, and researching teaching and learning in educational systems (mostly in colleges and universities)
School Psychology	Testing and diagnosing gifted students as well as those with learning disabilities, mostly in the school setting
Social Psychology	Teaching and researching social influences on individuals
Industrial/ Organizational Psychology	Teaching, researching, or programming design concerning business and industry
Experimental and Cognitive Psychology	Teaching, and researching human information processing such as perception, language, and memory
Engineering Psychology	Researching the interactions between humans and tools, equipment, and systems
Community Psychology	Providing activities that will benefit the community
Developmental Psychology	Studying human development from conception to death
Physiological Psychology, Biopsychology, Neuroscience	Examining biological approaches to psychology
Health Psychology	Relating to health and medicine or taking place in hospitals
Comparative and Animal Psychology	Involving the analysis of animal behaviour and the comparison of different species
Forensic Psychology	Involving the legal system, the prison system, and the court systems
Methodology and Statistical Consultation	Conducting experiments and analyzing data in research settings
Sports Psychology	Applying principles to athletic activity and exercise
Personality Psychology	Focusing on the traits that differentiate one person from another

Learning Activity 1.2: Psychologists at Work

Here are some examples of issues or questions that a psychologist would address. Determine the subfield of psychology that would study that issue or question. Write your answer in the space after each statement. Use the table in the *Psychologists at Work* section to help you choose the subfield of psychology. Sometimes there will be more than one answer for each question. Choose the one that you think is the best answer.

1. Joan, a Grade 12 student, is panicking. She needs to acquire better organizational skills and study habits in order to cope with the demands of her Grade 12 courses. _____

2. At what age do children generally begin to develop an emotional attachment to their fathers? _____

3. It is thought that watching pornographic films that depict violence against women can prompt aggressive behaviour in some men. _____

4. What chemicals are released in the human body as a result of a stressful event? What are their effects on behaviour? _____

5. Luke is unique in his manner of responding to crisis situations. He has an even temper and a positive outlook. _____

6. Eight-year-old Sarah's teachers are concerned that she has recently begun to withdraw socially and to show little interest in school work. They are seeking an explanation. _____

7. Martin's job is demanding and stressful. He wonders if his lifestyle is making him more prone to certain illnesses, such as cancer and heart disease. _____

8. A strong fear of crowds leads a young woman to seek treatment for her problem. _____

9. What mental strategies are involved in solving complex word problems? _____

continued

10. What teaching methods most effectively motivate elementary school students to successfully complete academic tests? _____

11. Jessica is asked to develop a management strategy that will encourage safer work practices in an assembly plant. _____

_____

Check the answer key.

Lesson Summary

In this lesson, psychology was defined as the science of behaviour and mental processes. You learned, through the goals of psychology, that psychology is a science. You also learned that many career opportunities exist in the field of psychology. These opportunities were outlined to help clarify what psychologists do.

Lesson 2: Development of Perspectives in Psychology

Lesson Introduction

Modern psychology is comprised of six main perspectives used to study behaviour and mental processes. They are the biological, behavioural, cognitive, socio-cultural, humanistic, and psychodynamic perspectives. In this lesson, you will learn about these six perspectives and how they compare to each other. We will begin with an overview of when, where, and how psychology began.

History of Psychology

To better understand psychology, it is important to see how it began.

Phrenology and Psychophysics

In the early 1800s, there was no distinct science of psychology. The word psychology was used to label a branch of philosophy that concerned itself with human consciousness. Two ancestors of scientific psychology emerged from this branch of philosophy. They are phrenology and psychophysics.

- **Phrenology** was a theory based on the assumption that bumps on the skull reflected a person's character or personality traits. The original idea came from Francis Gall. He believed that brain areas, like muscles, should grow when exercised. The shape of the skull should reflect the size or development of the underlying brain tissue, and a bump on the skull might indicate well-developed brain tissue. And so, the skull was mapped and numbered for this purpose. Unfortunately for the phrenologists, bumps on the skull do not reflect the size or development of underlying brain areas. Despite the fact that phrenology was a false science, it foreshadowed the modern psychology belief that different brain regions have distinct skills or functions.

Figure 1.1   **Phrenology**

Figure 1.1   **Phrenology**
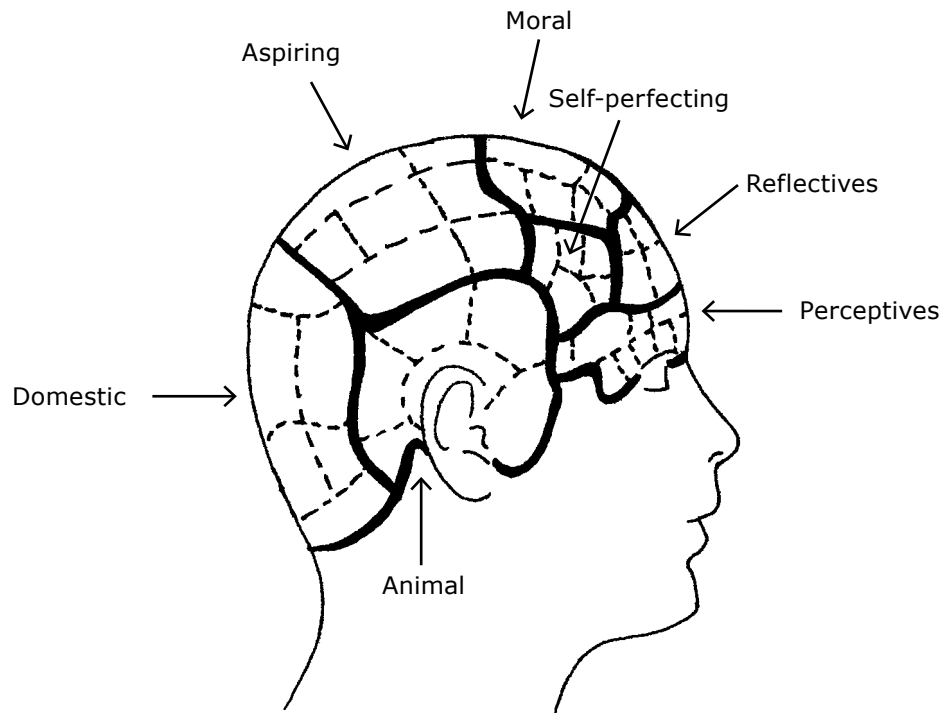
- **Psychophysics** refers to the interaction of the mind (psyche) and the physical world (physics). Psychophysicists were interested in how information from the physical world (light and sound) was translated into mental experiences (brightness and loudness). Modern experimental psychology began with a book published in 1869 by Gustav Fechner.

Wundt's Psychology and Structuralism

Wilhelm Wundt (1832–1920) was the first professional to call himself a psychologist. He founded one of the first psychological labs in Germany. He believed that if psychology was to be a science, psychologists would have to collect data about experience. He carefully gathered information about how quickly people responded to a stimulus and what they experienced. He did this in a controlled laboratory setting. He believed these experiments would lead to a consensus or agreement among scientists about the nature of experience. Wundt thought that careful scientific observers could simply look inside themselves to see the mind in action. The technique of "looking inside" to gather data about the mind is called **introspection**. Introspection was the dominant technique in psychology for several decades. The problem with it was that there was no way to resolve differences of opinion about what people saw when they looked inside. In other words, there was no way to arrive at a consensus about the nature of the human mind.

Wundt's student Edward Titchener introduced **structuralism**. This was the first prominent system for organizing psychological beliefs. Structuralists tried to understand the structure of the conscious experience by analyzing the intensity, clarity, and quality of its basic parts. Successful descriptions were the building blocks of consciousness. The focus was on the "what" of mental processes or thinking, not on the "why" or the "how".

For example, if structuralists were to look at a blade of grass, they would focus on the intensity of the green, the texture of the blade, and the roughly rectangular shape. This would determine the conscious experience.

James and Functionalism

Another approach to psychology, **functionalism**, was formulated in the 1890s by William James. He regarded the mind as a process or a function of the organism. This related to Darwin's theory that humans had evolved from simpler animals. James argued that consciousness must have evolved because it was useful for something; it had a function. For James, the goal of psychology was to study the functions of consciousness, or the ways consciousness helps people adapt to their environment.

For example, if functionalists were to look at a blade of grass, they would be interested in why or how someone interprets the blade of grass.

Freud and Psychoanalysis

Sigmund Freud was a mid-century psychiatrist from Vienna. He believed that psychological problems could often be traced to childhood sexual conflicts over issues such as breastfeeding, toilet training, and sexual jealousy centered on the parents. In 1900, he introduced the first complete theory of personality which he called **psychoanalysis**. It focused on abnormal behaviour and relied on personal observation and reflection instead of controlled laboratory experimentation.

Pavlov and Conditioning

The classical studies of animal learning in 1906 by Ivan Pavlov, a Russian physiologist, fuelled a move in psychology toward interest in observable behaviour and away from the self-examination of inner ideas and experiences. His experiments with salivating dogs have become famous. His study of the conditioned reflex provided psychology with a model of learning that is called **classical conditioning**.

Watson and Behaviourism

Around 1900, the time was right for a new approach to psychology. John B. Watson, an American psychologist, believed that psychology should be defined as the study of behaviour. He called this **behaviourism**. He completely eliminated introspection (looking inside oneself to gather data about the mind) from psychology and relied solely on the scientific method. This meant studying only things that could be observed and measured. For Watson, studying the **unconscious** or anything that you can't see was of little value. In the past 40 years, this perspective has been modified by other behaviourists, such as B.F. Skinner and Albert Bandura. Today, behaviourism focuses on learning through rewards and observation. By the end of the 1970s, extreme forms of behaviourism were disappearing and humanistic psychology became a dominant perspective.

Maslow, Rogers, and Humanism

Humanistic psychology focuses on inner needs, fulfillment, the search for identity, and other distinctly human concerns. It is less concerned with researching human behaviour than with describing its meaning and purpose. Abraham Maslow and Carl Rogers emphasized conscious experience as the focus of psychology. They believed that humans have free will in their decision making, and that healthy people strive to reach their full potential. They rejected the idea that humans are controlled by a series of rewards and reinforcements.

Modern Trends of Cognition, Neuroscience, and Socio-cultural Ideas

Cognition emphasizes information processing within humans. It focuses on how people think. More specifically, how they take in, process, store, and retrieve information.

Neuroscience emphasizes the biology of the brain and nervous system. Neuroscientists use a variety of scanning techniques that reveal brain structures and activity.

The **socio-cultural perspective** examines how thinking and behaviour change depending on the setting or situation.

New Areas of Interest

There are three new areas of interest in psychology. They are behaviour genetics, evolutionary psychology, and positive psychology.

Those studying **behaviour genetics** focus on the relative effects of our genes and environment on our behaviour. It is a combination of biology and behaviourism.

Those studying **evolutionary psychology** focus on studying behaviours that helped our ancestors survive. This approach combines biological, psychological, and social aspects of human behaviour.

Martin Seligman began the **positive psychology** movement in 1998. The focus is on making life more productive and fulfilling, and on identifying and nurturing talent and wisdom. Though it resembles the humanistic perspective, there is, however, a research component.

Eclectic View

No one perspective alone can answer all of the questions that psychology addresses. Each perspective examines behaviour and mental processes from a different point of view. Most psychologists today choose to view behaviour from more than one perspective because they know that this choice will increase their understanding of topics that interest them.

The Six Psychological Perspectives

Perspective 1: The Biological Perspective

The biological perspective focuses on how internal physical, chemical, and biological processes affect behaviour. Human genes, hormones, and neurotransmitters in the brain affect human thinking and reactions.

Perspective 2: The Behavioural Perspective

The behavioural perspective focuses on how the environment shapes and controls behaviour. Human thought and behaviour are explained in terms of conditioning. Observable behaviours and reactions in response to specific behaviours are examined.

Perspective 3: The Cognitive Perspective

The cognitive perspective focuses on how mental processing of information guides behaviour. In other words, how we interpret, process, and remember environmental events. The rules that we use to view the world are important in understanding why we think and behave the way we do.

Perspective 4: The Socio-cultural Perspective

The socio-cultural perspective focuses on how thinking and behaviour change depending on the setting or situation. It examines how our thoughts and behaviours vary from people living in other cultures. There is an emphasis on the influence that culture has on how we think and act.

Perspective 5: The Humanistic Perspective

The humanistic perspective focuses on how self-image and perceptions guide behaviour. There is a belief that we choose most of our behaviours and that these choices are guided by physiological, emotional, or spiritual needs.

Perspective 6: The Psychodynamic Perspective

The psychodynamic perspective focuses on how behaviour comes from hidden or unconscious parts of the mind. The unconscious mind (the part that we don't have control over or access to) controls many of our thoughts and actions.

Timeline of Psychological Perspectives

The following timeline will show you the time periods in which each of the perspectives mentioned in this lesson had the greatest historical significance in psychology's development.

		Psychodynamic Perspective (1900–1975)				
Biological Perspective (1850)		Functionalism (1900–1950)			Cognitive Perspective (1960)	
1850	1875	1900	1925	1950	1975	2000
	Structuralism (1875–1925)		Social-cultural Perspective (1925)			
		Behaviourism (1920)	Humanistic Perspective (1955–1980)			
			Gestalt Psychology (1930–1960)			
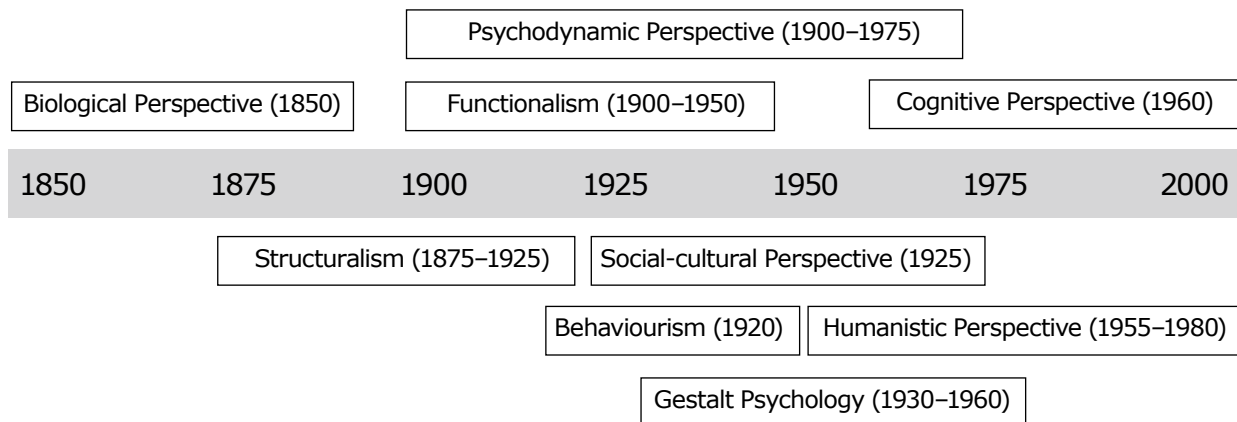
Now that you have an understanding of how modern psychology came to be, let's take a look at how each of the modern perspectives would explain a particular behaviour.

Example of the Modern Perspectives

The following is an example of how the different perspectives might explain whether or not a person will help a stranger pick up a spilled bag of groceries when given the opportunity.

Perspective	Explanation of the Helping Behaviour
Biological	Brain chemistry controls the emotions and thoughts that eventually produce helping behaviour. Levels of a naturally occurring "feel-good" chemical found in the brain could affect helping behaviour. Those lacking normal amounts of this brain chemical may be depressed. Consequently, the depression could keep the person from wanting to help pick up the groceries.
Behavioural	If we have witnessed or been rewarded for helping behaviour, we are more likely to help. Learning that rewards come to those who help others fosters helping behaviours.
Cognitive	Our individual interpretations of an event affect how we respond. We may choose to help the shopper because we think it will make us look good to others. If we think helping will cause us to look silly, we will leave the groceries on the ground.
Socio-cultural	If we come from a cultural background that values helping, we are more likely to help. We are also more likely to help if we are in a comfortable situation, such as in the company of a good friend rather than if we are in a large, unfamiliar crowd.
Humanistic	If our needs for nourishment and safety have been met, we are more likely to feel we can reach out and help others.
Psychodynamic	Unresolved inner conflicts can affect whether or not we help others. Helpful behaviour results from an unfulfilled childhood wish to have one's mother accept one's offer to help.

Learning Activity 1.3: Psychological Perspectives

Look at the following statements that all have to do with studying anger. Decide which of the six perspectives might be involved and write your answer in the space after each statement. The perspectives are

- biological
- behavioural
- cognitive
- socio-cultural
- humanistic
- psychodynamic

1. Which perspective might study the brain circuits that produce the physical state of being "red in the face"? _____

2. Which perspective might view an angry outburst as an outlet for our unconscious thoughts? _____

3. Which perspective might study the facial expressions and body gestures that accompany anger? _____

4. Which perspective might study how our interpretation of a situation affects our anger and how our anger affects our thinking? _____

5. Which perspective might explore which situations produce the most anger and how expressions of anger vary across cultures? _____

6. Which perspective would look at the personal values and social conditions behind exhibiting anger so that behaviour can be controlled and the person can reach their full potential? _____

Check the answer key.

Lesson Summary

In this lesson, the history of psychology was explored.

■ Psychology came to be in the mid-1800s. It was defined as the science of consciousness.

■ By the 1920s, psychologists were more likely to define their field as the science of behaviour. Behaviourists argued that a truly scientific psychologist should report only the data that is actually observed— behaviour. The behavioural era dominated from the 1920s to the 1950s.

■ As a reaction to the neglect of the study of the mind, humanistic psychology emerged during the 1960s.

■ In the 1970s, cognitive psychology began as computers provided a way to look at mental processing and human information processing.

■ In the 1980s, neuroscience emerged as an important source of information about behaviour and mental processes.

■ Today, the six major approaches to psychology coexist giving way to an eclectic view. These six approaches, known as perspectives, are as follows:

  ■ biological

  ■ behavioural

  ■ cognitive

  ■ socio-cultural

  ■ humanistic

  ■ psychodynamic

Notes

LESSON 3: RESEARCH IN PSYCHOLOGY

Lesson Introduction

How do you know what you know? There are, in fact, many ways that you know what you know. You know because a friend told you, you read about it, or it just seems obvious. While this may be correct, it may also be wrong. Psychologists rely on knowledge gained by using the scientific method. In this lesson, you will learn how research in psychology is conducted by looking at two main types of research strategies. These research strategies are quantitative and qualitative. The strategies include observation, case studies, correlational studies, surveys, longitudinal and cross-sectional studies, and experiments.

Why is Research Important?

Did you sign up for this course hoping to study the fun stuff associated with psychology that you have seen on television and in popular magazines? Without research, there would be no reliable and systematic way to consider the answers to the many questions that you have.

Research is a set of methods; it is a way of asking questions about the world and drawing logical, supported conclusions. You learned about this when you studied science in previous grades.

Throughout this lesson, we will use an example to help you understand all of the ideas. The text in the boxes will indicate how each idea relates to the example.

> Let's say that your school is about to implement a new policy banning the use of MP3 players for listening to music while studying in the library.

Observation and Bias

The simplest scientific technique is **observation**. It is systematic. This means that you watch for specific behaviours and record what you see. For example, you might be asked to document the colour of the cars that go by your house between the hours of five and seven in the evening. Or, you could be asked to observe two dogs playing in your backyard and write down what you see. The information that you collect is called **data**.

There are many ways that data can be collected. Data might be collected by using a video recording device, administering a questionnaire, or using a checklist. The important thing is that it has to be collected so that other researchers who wish to repeat the observations can do so. No experiment is conducted when using this method. The researcher does not attempt to change the environment during the data collection phase. The data are analyzed and researchers look for interesting or important patterns. This technique can be used in the study of children.

There are three types of observation. They are naturalistic, controlled, and clinical.

1. Naturalistic Observation

Naturalistic observation is observational research that takes place in a natural or everyday setting such as a school. There is usually an effort to minimize the observer's impact by carrying out observations secretly or from a hidden vantage point. The following are examples of naturalistic observation:

- observing and recording the behaviour of students in the cafeteria
- observing and recording the behaviour of geese in the field
- observing and recording the behaviour of children at recess in the playground

2. Controlled Observation

Controlled observation occurs when observational research is carried out under carefully arranged conditions. Each subject is exposed to the same situation to see differences between individual reactions. The following are examples of controlled observation:

- observing and recording the behaviour of students in the cafeteria when someone is crying or not crying
- observing and recording the behaviour of geese in the field when a horn is blaring and is not blaring
- observing and recording the behaviour of children at recess in the playground when there is an adult supervisor present and not present

3. Clinical Observation

Clinical observation consists of observations made by a skilled clinician interacting with a patient or client. The clinician takes notes pertaining to the interaction, usually immediately after the interview or meeting with the client.

Researcher Bias

Your observations may be influenced by what you want to discover. This is called **researcher bias**. Bias occurs whenever any factor unfairly increases the likelihood that the researcher will reach a particular conclusion. Researchers try to avoid bias.

In our example, you might observe students using MP3 players and compare them with students not using MP3 players. Your observations may be influenced in such a way that you and the principal might observe students using MP3 players while studying and come to completely opposite conclusions.

The principal, who wants MP3 players banned, notices that students spend time mouthing the words to the songs that they are listening to instead of studying. You, on the other hand, see that the students who have MP3 players are not distracted by the other students in the library. Everyone notices only the behaviours that support their own ideas.

Critical Thinking

One way to reduce researcher bias is to use **critical thinking**. This is thinking that does not blindly accept arguments and conclusions.

In our example, you could compare the grades of students who use MP3 players while studying with the grades of students who do not use MP3 players. Or, you could have observers count specific behaviours such as how many times a student has a conversation with another student in a ten minute period, or how many pages a student reads in ten minutes. One of the flaws in this method is that turning pages doesn't mean that studying is occurring.

Participant Bias

Researchers must also watch out for **participant bias**. This is the tendency for research participants to respond in a certain way because they know they are being observed or they believe they know what the researcher wants.

> Maybe the students in our example will act differently when they know someone is watching them. They might study harder.

Case Studies

Researchers who study individuals in depth use the **case study method**. This method is prone to bias. Sometimes a case study is all that can be done. For example, the only way to get information on the effects of child abuse is to find people who have reported abuse and to study that person or group of people. Since no two cases are ever exactly alike, there is always some doubt as to the real effects.

> In our example, we could do an in-depth study of just one student in the library who uses an MP3 player. The results of this study would be unrepresentative. This means that you wouldn't be able to make the same conclusions about everyone who uses an MP3 player while studying.

Correlation

It is often useful to know if two things or variables are related. The research technique that is used is the correlational study.

> In our example, the two variables are the use or non-use of MP3 players and the effectiveness of the students' studying.

Correlations can be either positive or negative.

A positive correlation exists between two things if one variable increases or decreases and the other one does the same.

> If the effectiveness of studying increases when students use MP3 players and decreases when they do not use MP3 players, then the two variables are positively correlated.

A negative correlation exists between two things if one variable increases or decreases and the other variable does the opposite.

> If the effectiveness of studying decreases when students use MP3 players and increases when they do not use MP3 players, then the two variables are negatively correlated.

If there is no correlation, it means that knowing something about one variable does not tell you something about the other variable.

> In our example, this would mean that there is no relationship between the effectiveness of studying and the use or non-use of an MP3 player while studying in the library.

It is very important to remember that the discovery of a correlation does not prove that a cause and effect relationship exists. Correlational research results can tell you that certain variables are related, but not why they are related.

Questionnaires, Surveys, and Polls

One of the easiest forms of data collection is administering a questionnaire. This is very similar to taking a poll. Professionals usually conduct surveys and polls, while amateurs use questionnaires.

> In our example, students could fill out a short questionnaire about the effects of using MP3 players while studying in the library.

Critical thinking is especially necessary when dealing with questionnaire research. Questionnaire research relies on self-reports. The purpose of a questionnaire is to tell researchers about a group.

Population

A population is the group from which a sample is taken for the study.

The population, in our example, could be every student who studies in the library.

Random Sample

A random sample from a population is used in a study because you couldn't possibly collect data on everyone in the population. This group must be representative of the population. Each member must have an equal chance of being included in the study. The sample should not be too small in number. There are many ways to randomly select members. For example, you could draw names out of a hat, choose every fifth name from a list, or give everyone a number and then choose the members.

In our example, in order to get a random sample, every member of the population must have an equal chance of being selected. If the population is the students who study in the library at your school, you could draw a random sample by selecting every tenth name from a list of students who say that they study in the library at the school.

Longitudinal and Cross-Sectional Studies

Longitudinal studies follow the same group of individuals over many years.

You could keep track of a group of students who study in the library throughout their lifetime to determine the long-term effects of using an MP3 player while studying.

Cross-sectional studies compare people of different ages at one time.

> You could study students from different age groups who use the library for studying.

Longitudinal and cross-sectional studies are techniques of particular interest to developmental psychologists. They study how individuals change throughout their lifespan.

Experiments

The experimental method is the only method that allows us to draw conclusions about the cause and effect relationship.

Hypotheses and Operational Definitions

In designing an experiment, we would first generate a hypothesis. This hypothesis would become our testable prediction of the experiment's outcome.

> The hypothesis in our example would be, "Using an MP3 player influences concentration while studying in the library."

Researchers often start with general expectations. They then put their variables in a more specific form that allows them to be precisely measured. In the language of research, they provide operational definitions of the variables.

> The operational definition of the variables in our example is, "Students assigned to use MP3 players in the library will have lower average grades at the end of the semester than students banned from using MP3 players."
>
> There are many different ways to operationally define the variables. It could be, "Students who use MP3 players each day in the library while studying read fewer pages in a one-hour block of time than students who are banned from using MP3 players."

Independent and Dependent Variables

Once we have agreed on the hypothesis and the operational definition of the variables, we still need to identify the two variables in the experiment as either the independent variable or the dependent variable.

The variable that should cause something to happen is the independent variable (IV).

In our example, the IV is the use or non-use of MP3 players.

The variable that should show the effect of the IV (or the outcome) is the dependent variable (DV).

In our example, the DV is the students' grade point average at the end of the semester.

Learning Activity 1.4: Determining the Variable

Identify the independent and dependent variables.

1. A group of social psychologists is interested in examining how the presence of bystanders affects whether or not students in a school will help another student who has fainted in the hallway.

    Independent Variable: _____

    Dependent Variable: _____

2. A cognitive psychologist is doing a study on the effects of caffeine on memory in high school students.

    Independent Variable: _____

    Dependent Variable: _____

3. A biopsychologist is interested in whether or not a new drug will alter the level of a neurotransmitter in the brains of rats.

    Independent Variable: _____

    Dependent Variable: _____

4. Your teachers are interested in whether or not distraction has an undesirable effect on memory.

    Independent Variable: _____

    Dependent Variable: _____

5. The band teacher is interested in the effects of music on academic performance.

    Independent Variable: _____

    Dependent Variable: _____

6. A group of psychologists is studying the effects of human contact on learning in rats.

    Independent Variable: _____

    Dependent Variable: _____

Learning Activity 1.4: Determining the Variable (continued)

7. The math teacher has developed a new method to teach children algebra.

   Independent Variable: _____

   Dependent Variable: _____

8. A group of psychologists is interested in determining whether or not dancing will help alleviate mild depression.

   Independent Variable: _____

   Dependent Variable: _____

Check the answer key.

Groups, Random Assignment, and Confounding Variables

In order to make the independent variable vary (take on different values), we set up groups of participants. Typical experiments have at least two groups. One is an experimental group, while the other is a control group (sometimes referred to as the experimental and control conditions).

The participants in the experimental group are exposed to the treatment (independent variable) while the participants in the control group are not. The purpose of this second group is to serve as a comparison for the experimental group.

> In our example, forty students are selected to participate in the experiment by selecting every tenth name on the list of students who use the library for studying. These names are then placed in a hat and the first twenty names are assigned to the experimental group and the next twenty to the control group.

The individual differences among participants are the largest category of a special kind of variable known as confounding variables. These are variables, other than the IV, that could produce a change in the DV. Confounding variables must be controlled. You must eliminate as many of these as possible before you get your sample so that your results are accurate.

Confounding variables, in our example, could include differences in IQ scores, the amount of sleep the students get, the number of personal problems the students have, and who the students' teacher is for a specific subject.

Control for Other Confounding Variables

Researchers use a variety of techniques to minimize the effects of confounding variables. The researcher must account for the following:

- individual differences among participants
- environmental differences such as lighting, noise, and temperature

Did both groups study at the same time of day? Were the room temperature and lighting conditions the same for both groups?

Expectation Effects

Expectation effects include making sure that participants are not aware of the hypothesis of the experiment. If they were, their expectations could influence the outcome.

Did the experimental group expect to do better? Did the researchers expect the experimental group to do better?

To reduce such effects, researchers use three different procedures. These procedures are known as the single-blind procedure, the double-blind procedure, and the placebo.

Single-blind Procedure

Researchers often use a blind or masked procedure. Accordingly, they don't tell participants what the hypothesis is until after the data are collected.

Double-blind Procedure

In this procedure, the people collecting the data don't know the expected outcome of the research or which participants are in which group. Also, the participants don't know if they are in the experimental group or the control group.

Placebo

Researchers use this special kind of control in all drug studies. It involves a non-active substance or condition that is administered instead of the drug.

Let's review our example. We are conducting an experiment to test the hypothesis that students assigned to use MP3 players each day in the library while studying will have lower average grades at the end of the semester than students banned from using MP3 players.

The IV is the presence or absence of the MP3 player.

The DV is the average grades at the end of the semester.

Students were randomly selected from the entire population of students who use the library to study.

We randomly assigned students to either the experimental group (using the MP3 player) or the control group (not using the MP3 player).

All environmental conditions are as similar as possible.

Reliability and Validity

There are safeguards required for experiments to make sure that the research is both valid and reliable.

Research is valid when it measures what the researcher set out to measure. In other words, the research is accurate.

Research is reliable when it can be replicated. In other words, the research is consistent.

If an experimental result can be obtained only once, we must conclude that it was caused by chance and not by the independent variable. This means that there is no apparent cause and effect relationship between the independent variable and the dependent variable.

Summary of the Experimental Method

The steps of the experimental method are as follows:

1. Develop the hypothesis.
2. Create operational definitions for the independent and dependent variables.
3. Select a random sample of participants from the population.
4. Assign the participants randomly to the experimental and control groups.
5. Expose the experimental group, but not the control group, to the IV. If necessary, use a placebo with the control group to balance expectations.
6. Control other confounding variables by using a double-blind procedure and treating both groups the same except for exposure to the IV.
7. Learn the impact of the IV by measuring the DV for both groups.
8. Use statistical analysis to discover whether the difference in the DV between the two groups is likely to have been caused by the IV. (You will learn about this topic in the next lesson.)

It is now time for you to complete your first assignment. It is located on the following page. You will be sending this assignment, as well as the other assignments in Module 1, to the Distance Learning Unit when you have completed Module 1.

Assignment 1.1: Research in Psychology (16 marks)

Name the independent variable, the dependent variable, the control group, and the experimental group for each scenario.

1. A researcher is interested in how the activity level of three-year-olds is affected by viewing a 30-minute video of either a violent or a non-violent cartoon. *(4 marks)*

   IV: _____

   DV: _____

   Experimental group: _____

   Control group: _____

2. A therapist wants to test a new drug designed to increase the ability of teenagers with ADHD to take accurate notes in class. *(4 marks)*

   IV: _____

   DV: _____

   Experimental group: _____

   Control group: _____

3. A biopsychologist wants to know whether exposing adult female rats to testosterone increases their aggressive behaviour. *(4 marks)*

   IV: _____

   DV: _____

   Experimental group: _____

   Control group: _____

4. An industrial psychologist believes that cooling the room temperature may affect the productivity of the workers on an assembly line. *(4 marks)*

   IV: _____

   DV: _____

   Experimental group: _____

   Control group: _____

Notes

Comparison of Research Methods

The following outlines the advantages and disadvantages of the various research methods that were covered in this lesson.

Systematic Observation: This method consists of the systematic study of behaviour in natural settings.

- Advantage: The behaviour is observed in the settings where it normally occurs.
- Disadvantage: It cannot be used to establish the cause and effect relationships and is often costly and difficult to perform.

Case Study Method: This method consists of the detailed study of a small number of persons.

- Advantage: Detailed information is gathered and individuals can be studied for long periods of time.
- Disadvantage: The ability to generalize results is uncertain and the objectivity of the researcher may be compromised.

Surveys: This method consists of asking a large number of people about their attitudes or views.

- Advantage: Large amounts of information can be acquired quickly and accurate predictions of large scale trends can sometimes be made.
- Disadvantage: The ability to generalize may be questionable unless persons surveyed are a representative sample of a larger population.

Correlational Research: This method consists of measuring two or more variables to determine if they are related in any way.

- Advantage: Large amounts of information can be gathered quickly. This method can be used in the field as well as in laboratory settings.
- Disadvantage: It is difficult to establish the cause and effect relationships.

Experimentation: This method consists of varying the presence or the strength of one or more variables.

- Advantage: The cause and effect relationships can be established and precise control can be exerted over other potentially confounding variables.
- Disadvantage: The results can be subject to several sources of bias and the ability to generalize can be doubtful if the behaviour is observed under highly artificial conditions.

Learning Activity 1.5: Name That Method

Read the following scenarios and determine if the method used is correlational, experimental, or observational.

1. Professor Black is interested in understanding the relationship between self-esteem and anxiety in group situations.

   _____

2. Researchers at a university are interested in studying relationships among employees at a specific airplane-manufacturing company. These researchers decide to observe the interactions of co-workers in the factory.

   _____

3. Professor Guptah wishes to study the effects of food deprivation on learning in rats.

   _____

4. Dr. Cheung and her colleagues wish to study the aggressive behaviour of children in elementary school by observing children at play.

   _____

5. A group of researchers from a child advocacy group wishes to examine the relationship between exposure to televised violence and aggressive behaviour in children by asking parents to report on how much television their children watch, as well as what types of programs are watched.

   _____

6. Dr. Beauchamp wishes to investigate the effects of a new training program at a fast-food restaurant on employees' job performance.

   _____

7. A group of researchers wishes to study the organizational culture of successful schools.

   _____

8. Dr. Cortez is interested in the relationship between the different strategies used by a therapist and their effectiveness.

   _____

continued

Learning Activity 1.5: Name That Method (continued)

9. A group of researchers is interested in the effects of caffeinated beverages on test performance.

   _____

10. Dr. Courchene is interested in studying peer influence among high school students by recording their clothing choices and their hairstyles.

    _____

Check the answer key.

Lesson Summary

In this lesson, different methods used by psychologists to gather information about behaviour and mental processes were presented. The main methods are systematic observation, case study, surveys, correlational studies, and experimentation. The advantages and disadvantages of each research method were also discussed.

Notes

Assignment 1.2: Which Design Would You Choose? (9 marks)

For each of the following research questions, decide which research design would be best and circle it. Then complete the design information only for the method that you chose.

Research Question 1: Is it better to send your children to daycare or to stay at home with them in order for them to achieve later success in elementary school? *(3 marks)*

Correlational design

Variable 1: _____

Variable 2: _____

Limitations: _____

or

Experimental design

Independent Variable: _____

Dependent Variable: _____

Limitations: _____

Research Question 2: Does the number of hours slept at night impact the grades obtained by students in their first period of the day? *(3 marks)*

Correlational design

Variable 1: _____

Variable 2: _____

Limitations: _____

or

Experimental design

Independent Variable: _____

Dependent Variable: _____

Limitations: _____

continued

Assignment 1.2: Which Design Would You Choose? (continued)

Research Question 3: Does text messaging help a person increase their computer-typing speed? *(3 marks)*

Correlational design

Variable 1: _____

Variable 2: _____

Limitations: _____

or

Experimental design

Independent Variable: _____

Dependent Variable: _____

Limitations: _____

L e s s o n 4 : U s e o f S t a t i s t i c s i n R e s e a r c h

Lesson Introduction

In this lesson, you will learn how to analyze the numbers (your data) in order to determine if your hypothesis is correct. In order to analyze the data, you will use statistics once your study is completed and all the data is collected.

Without a basic understanding of statistics, you are at a serious disadvantage because statistical information surrounds us. For example, you hear that 9 out of 10 dentists want you to use a particular brand of toothpaste; you learn about the earned run averages of a particular baseball team; and you hear that people prefer the blue candy-coated chocolate treats over the green, yellow, orange, red, and brown ones. The overall purpose of statistics is to make data more meaningful.

Once again, we will use the example pertaining to the use of MP3 players while studying in the library to help you understand the key ideas included in this lesson.

Frequency Distributions

A frequency distribution is an ordered list of scores, from highest to lowest or lowest to highest. The data can then be easily presented as a bar graph.

> In the MP3 player example, you could list the average grades that semester for the MP3 player users and the non-users.

Measures of Central Tendency

The next thing that we need is to determine what constitutes a normal score. The normal score will represent the centre of a distribution.

> In our example we have two groups. The participants in one group use MP3 players while those in the other group do not. If the centre of one distribution is higher than the centre of the other, this may help us decide whether or not our hypothesis is correct.

There are three methods to help us determine the centre.

Mode

The **mode** is the score that occurs most frequently in the distribution. It is not the best source of information because it is possible for it to be nowhere near the centre of the distribution.

Mean

The **mean** is the most familiar measure of central tendency. It is commonly called the average. It is calculated by adding all of the scores and then dividing by the number of scores that were added together. The mean can be misleading if there are some really high or really low scores.

Median

The **median** shows us the middle of a distribution. Once you have put all the scores in order, you find the middle scores. The extremely high scores and the extremely low scores will not have an impact on the middle score.

Measures of Variation

Even though it is important to know where the centre of a distribution falls, it is also important to know how different or varied the scores are from the mode, the mean, and the median.

Range

The simplest measure of variation is the **range**. It is the difference between the highest score and the lowest score.

Standard Deviation

Standard deviation is a measure of the overall variation of a distribution of numbers. The smaller the standard deviation, the closer the scores are to the mean. The higher the standard deviation, the further the scores are to the mean.

Although you don't have to learn how to calculate this for this course, you should know that there is a mathematical formula used to do so.

Normal Distribution

A lot of psychological data can be presented in a graph called a normal distribution or bell-shaped curve. The right and left sides of the curve are identical. The highest point represents all three measures of central tendency (the mode, the mean, and the median). The following is an example of such a graph.

Figure 1.2	**Normal Distribution**

14% of the scores fall between one and two standard deviations below the mean

34% of the scores fall between the mean and one standard deviation below & above this value

14% of the scores fall between one and two standard deviations above the mean

Frequency of Each Score

High

Low

3	4	5	6	7
Two Standard Deviations below the Mean	One Standard Deviation below the Mean	Mean	One Standard Deviation above the Mean	Two Standard Deviation above the Mean

Comparative Statistics

The two major comparative statistics are percentage and percentile rank.

- A **percentage** compares a score to an imaginary score of 100.
- A **percentile rank** compares one score with other scores in an imaginary group of 100 individuals. It tells you where a particular score stands in that group and how many people had equal or lower scores.

Correlation Coefficient

The **correlation coefficient** is a number that represents the strength of the relationship between two variables. The number has a value between –1 and +1.

If the correlation coefficient, r, has a value of –1, we have a perfect negative correlation. This means that every time one variable increases the other variable decreases by the same amount.

If $r=+1$, we have a perfect positive correlation. This means that every time one variable increases the other variable increases by the same amount.

If $r=0$, there is no correlation.

Remember the values of r can be anywhere between –1 and +1. They are represented in a graph called a scatter plot. The data is mapped as dots on this type of graph.

Assignment 1.3: Correlation Study Analysis (9 marks)

You are going to undertake a correlational study to determine if bedroom size has an effect on teenager comfort level.

1. Suppose that, for each of six different bedroom sizes, you measure two variables: (a) room size in square feet, and (b) teenager comfort level. Using this example, explain the difference between the three possible outcomes: a positive correlation, a negative correlation, or no correlation between the two variables. *(3 marks)*

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2. Suppose that the results of your study were as follows.
   (Rating of 5 = high satisfaction, 1 = low satisfaction)

Bedroom	Room Size	Average Satisfaction Rating
U	120	3
V	140	5
W	150	4
X	110	2
Y	160	5
Z	130	3

continued

Assignment 1.3: Correlation Study Analysis (continued)

Plot the results on the graph.
(3 marks—½ mark for each bedroom plotted)
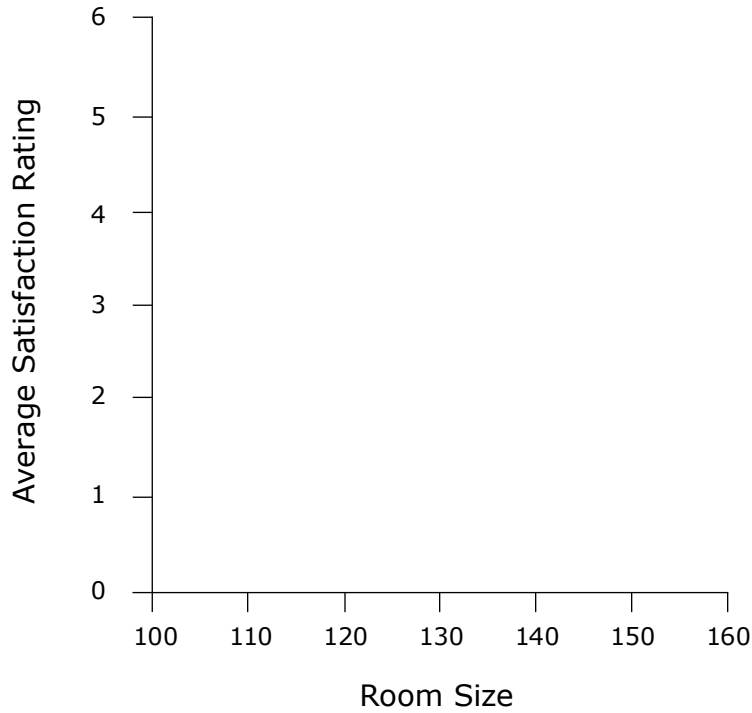
3. Does the graph show a positive correlation, a negative correlation, or no correlation? Estimate the correlation coefficient. *(1 mark)*

   _____

   _____

   _____

4. Do these results prove that bedroom size causes a change in teenager's comfort level? Why or why not? *(2 marks)*

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Statistical Inference

The statistics so far in this lesson are called **descriptive statistics** because they describe data in a way that makes them more meaningful.

Another kind of statistics that is important for psychologists is called **inferential statistics**. This lets us make decisions or reach conclusions about a set of data.

> In our MP3 player example, we collected grade average data from our two groups: the experimental group, whose members used MP3 players while studying; and the control group, whose members did not use MP3 players while studying.
>
> Let's assume that, after we calculated the measures of central tendency (the mode, the mean, and the median), we found that the group that used MP3 players did not perform quite as well as the other group. The results showed a four-point difference in the means of the grades between the two groups. The key question becomes whether or not the difference is statistically significant. In other words, does it represent a real difference, or it is due to chance?

There are three factors that are involved in inferential statistics.

1. **Difference between the two groups' means:** If the means are far apart, the result is more likely to be significant.
2. **Number of participants:** If each group is comprised of only a few people, the results are not as likely to be as significant as they would be if each group was comprised of a large number of randomly selected people.
3. **Standard deviation of the two groups:** If the scores of each group are mostly close to each mean, then the results are significant.

Lesson Summary

This lesson focused on the two types of statistics. These are descriptive statistics and inferential statistics.

Frequency distributions, measures of central tendency (mode, mean, and median), measures of variation (range and standard deviation), normal distributions, percentage and percentile rank, and correlation coefficient are all examples of descriptive statistics. They make data more meaningful.

Inferential statistics let us make decisions or reach a conclusion about a set of data.

Psychologists agree that a result is said to be statistically significant if there is no more than a five percent likelihood that it could have resulted from chance alone.

We all need a basic understanding of statistics to understand the information with which we are bombarded on a daily basis.

Assignment 1.4: Experimental Design (14 marks)

You are going to design an experiment to show whether or not eating an oatmeal raisin cookie before one's first class in the morning has an effect on academic success in that class.

The factors that must be considered when designing an experiment are outlined below. Write your answers in the spaces under each factor.

1. **State your hypothesis.** *(1 mark)*

   This is what you think your study will show.

   _____

   _____

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2. **Determine who should be included in your study.** *(1 mark)*

   Who is the population and who is the sample?

   The larger group of people from which your samples are drawn is known as your population. If you are studying some aspect of general human behaviour, you will want your subjects to represent a wide variety of people.

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continued

Assignment 1.4: Experimental Design (continued)

3. Make operational definitions of your variables. Identify your independent and dependent variables. *(4 marks)*

An operational definition is a statement of the specific procedures you will use to measure your variables. For example, "People who exercise regularly sleep better at night." Define exactly what you mean by "exercise regularly" (for instance, at least thirty minutes, three times a week) and what will indicate "better" sleep (more hours of sleep per night, waking fewer times during the night, self-reported feelings of restfulness, and so forth).

Whenever possible, your operational definition should be measurable; for example, "Watching violent television increases aggression in children." You can have an objective observer rank the aggressiveness of the subjects based on a scale of 1 to 5 and count the number of times specific aggressive behaviours occur during a set period of time, or you can have the subjects self-report the number of times they have exhibited aggressive behaviour.

The independent variable is the one that the researcher changes. The dependent variable is the result.

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continued

Assignment 1.4: Experimental Design (continued)

4. Control for confounding variables *(2 marks)*

Confounding variables are any variable, other than the independent variable, that could influence the results of your study. For example, if you are testing the effect of sugar consumption on mood and you have your control group (no sugar) rate their mood in the morning and your experimental group (sugar) rate their mood in the afternoon, then time of day will be a major confounding variable.

Random sampling means that all members of the population you are studying must have an equal chance of participating. In psychology, "random sampling" does not mean choosing people at random. For example, you could choose every tenth person in the phone book.

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5. Random assignment *(2 marks)*

Each subject has an equal chance of being in the control or experimental group. Again, this should be done systematically (for instance, every person chooses a bead as they walk in the door and those with red beads become the control group while those with blue beads become the experimental group). Explain what happens in the experimental group and in the control group.

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continued

Assignment 1.4: Experimental Design (continued)

6. Analysis of results *(4 marks)*

Make sure that you have something with which to compare your results (for example, a control group) and determine how they will be compared. (For instance, find the average of the two groups and compare them.) Which do you expect to be higher if your hypothesis is supported?

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LESSON 5: ETHICAL GUIDELINES

Lesson Introduction

In this lesson, you will learn about the ethical guidelines that are established by the American Psychological Association (APA). Ethics are important in all research on both humans and animals. When something is considered ethical, it means that it is considered morally right. Many hypotheses cannot be tested experimentally because they are unethical or immoral. Ethics committees are set up to read and screen all research proposals. To determine if the research is ethical or not, guidelines have been established for human research and for animal research.

Human Research

Research involving human subjects must follow these guidelines:

- **Informed consent:** Participants must know that they are involved in research and give their consent. It is at this time that participants need to be told about any potential risks.

- **Coercion:** Participation must be voluntary. No one can be forced to participate. Participants have the right to refuse to participate or to withdraw at any time from the study.

- **Anonymity/Confidentiality:** Participants' privacy must be protected. The researcher must never reveal their identities.

- **Risk:** Participants cannot be placed in any significant mental or physical risk.

- **Debriefing:** Participants must be told the purpose of the study and provided with ways to contact the researchers about the study results.

Animal Research

Research involving animals must follow these guidelines:

- **Clear scientific purpose:** The research must answer a specific, important scientific question. Animals are chosen because they are best-suited.

- **Humane treatment:** The animals used in the research must be cared for and housed in a humane way.

- **Legal possession of animals:** The animals used in research must be purchased from legal companies. If wild animals are used they must be trapped in a humane manner.

- **Minimum suffering:** The experimental procedures must be designed to use the least amount of suffering possible.

Psychologists use animals in research for several reasons. Some of these reasons are as follows:

- Many psychologists are simply interested in animal behaviour.
- There are biological and behavioural similarities between animals and humans. Consequently, by studying animals we can learn things that apply to humans.
- Because the lifespan of most animals is shorter than that of humans, we can study genetic effects over generations much faster in animals than in humans.
- Researchers have more control over experiments with animals than with humans.

Lesson Summary

In order to protect research participants (human and animal), members of the American Psychological Association (APA) have agreed to specific guidelines. All research proposals must be read and approved by committees of professionals who decide whether or not the research can be done.

Assignment 1.5: Ethical or Not (8 marks)

1. Give an example of research on human subjects that would be ethical. Use the guidelines of the APA to help you answer this question. *(2 marks)*

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2. Give an example of research on human subjects that would be unethical. Use the guidelines of the APA to help you answer this question. *(2 marks)*

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continued

Assignment 1.5: Ethical or Not (continued)

3. Give an example of research on animal subjects that would be ethical. Use the guidelines of the APA to help you answer this question. *(2 marks)*

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4. Give an example of research on animal subjects that would be unethical. Use the guidelines of the APA to help you answer this question. *(2 marks)*

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MODULE 1 SUMMARY

Congratulations. You have finished the first module of the course.

Submitting Your Assignments

It is now time for you to submit your assignments from Module 1 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 1 assignments and organize your material in the following order:

❑ Module 1 Cover Sheet (found at the end of the course Introduction)

❑ Assignment 1.1: Research in Psychology and Research Methods

❑ Assignment 1.2: Which Design Would You Choose?

❑ Assignment 1.3: Correlation Study Analysis

❑ Assignment 1.4: Experimental Design

❑ Assignment 1.5: Ethical or Not?

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Notes

MODULE 1

Learning Activity Answer Key

Learning Activity 1.1: Goals of Psychology

Read the following scenarios and determine to which of the four goals of psychology each one corresponds. Remember that the four goals are description, explanation, prediction, and control. Write your answer in the space after each statement.

1. A daycare worker has developed a teaching program that increases each child's self-esteem. __control__

2. The members of student council want to know why students don't want to go to school dances. __explanation__

3. As the manager at the local fast-food restaurant, you must interview high school students for a job opening using the questions that the head office has given you. __prediction__

4. As part of your Family Studies course, you are asked to observe a two-year-old child through a one-way mirror as he or she interacts with a roomful of toys. You document how many toys the child plays with and the length of time spent with each toy. __description__

5. Researchers have recently identified a gene that predisposes certain individuals to obesity. __explanation__

6. Some psychologists believe that more playground accidents occur among young children who watch violent cartoons. __prediction__

7. Studies demonstrate that Family Life education programs in high school should be mandatory because this type of education has led to reduced teenage pregnancy rates. __control__

8. Surveys show that women who graduate from college earn as much money per year as men who graduate from high school. __description__

Learning Activity 1.2: Psychologists at Work

Here are some examples of issues or questions that a psychologist would address. Determine the subfield of psychology that would study that issue or question. Write your answer in the space after each statement. Use the table in the *Psychologists at Work* section to help you choose the subfield of psychology. Sometimes there will be more than one answer for each question. Choose the one that you think is the best answer.

1. Joan, a Grade 12 student, is panicking. She needs to acquire better organizational skills and study habits in order to cope with the demands of her Grade 12 courses. __**counselling**__

2. At what age do children generally begin to develop an emotional attachment to their fathers? __**developmental**__

3. It is thought that watching pornographic films that depict violence against women can prompt aggressive behaviour in some men. __**social**__

4. What chemicals are released in the human body as a result of a stressful event? What are their effects on behaviour? __**biopsychology**__

5. Luke is unique in his manner of responding to crisis situations. He has an even temper and a positive outlook. __**personality**__

6. Eight-year-old Sarah's teachers are concerned that she has recently begun to withdraw socially and to show little interest in school work. They are seeking an explanation. __**school**__

7. Martin's job is demanding and stressful. He wonders if his lifestyle is making him more prone to certain illnesses, such as cancer and heart disease. __**health**__

8. A strong fear of crowds leads a young woman to seek treatment for her problem. __**clinical**__

9. What mental strategies are involved in solving complex word problems? __**cognitive**__

10. What teaching methods most effectively motivate elementary school students to successfully complete academic tests? __**educational**__

11. Jessica is asked to develop a management strategy that will encourage safer work practices in an assembly plant. __**industrial/organizational**__

Learning Activity 1.3: Psychological Perspectives

Look at the following statements that all have to do with studying anger. Decide which of the six perspectives might be involved and write your answer in the space after each statement. The perspectives are

- biological
- behavioural
- cognitive
- socio-cultural
- humanistic
- psychodynamic

1. Which perspective might study the brain circuits that produce the physical state of being "red in the face"? __**biological**__

2. Which perspective might view an angry outburst as an outlet for our unconscious thoughts? __**psychodynamic**__

3. Which perspective might study the facial expressions and body gestures that accompany anger? __**behavioural**__

4. Which perspective might study how our interpretation of a situation affects our anger and how our anger affects our thinking? __**cognitive**__

5. Which perspective might explore which situations produce the most anger and how expressions of anger vary across cultures? __**social-cultural**__

6. Which perspective would look at the personal values and social conditions behind exhibiting anger so that behaviour can be controlled and the person can reach their full potential? __**humanistic**__

Learning Activity 1.4: Determining the Variable

Identify the independent and dependent variables.

1. A group of social psychologists is interested in examining how the presence of bystanders affects whether or not students in a school will help another student who has fainted in the hallway.

   Independent Variable: __**presence of bystanders**__

   Dependent Variable: __**whether or not they help**__

2. A cognitive psychologist is doing a study on the effects of caffeine on memory in high school students.

   Independent Variable: __**amount of caffeine**__

   Dependent Variable: __**memory**__

3. A biopsychologist is interested in whether or not a new drug will alter the level of a neurotransmitter in the brains of rats.

   Independent Variable: __**drug**__

   Dependent Variable: __**level of the neurotransmitter**__

4. Your teachers are interested in whether or not distraction has an undesirable effect on memory.

   Independent Variable: __**distraction**__

   Dependent Variable: __**memory**__

5. The band teacher is interested in the effects of music on academic performance.

   Independent Variable: __**music**__

   Dependent Variable: __**academic performance**__

6. A group of psychologists is studying the effects of human contact on learning in rats.

   Independent Variable: __**human contact**__

   Dependent Variable: __**learning**__

7. The math teacher has developed a new method to teach children algebra.

   Independent Variable: __**math program**__

   Dependent Variable: __**academic program**__

8. A group of psychologists is interested in determining whether or not dancing will help alleviate mild depression.

   Independent Variable: __**dancing**__

   Dependent Variable: __**levels of depression**__

Learning Activity 1.5: Name That Method

Read the following scenarios and determine if the method used is correlational, experimental, or observational.

1. Professor Black is interested in understanding the relationship between self-esteem and anxiety in group situations. __**correlational**__

2. Researchers at a university are interested in studying relationships among employees at a specific airplane-manufacturing company. These researchers decide to observe the interactions of co-workers in the factory. __**observational**__

3. Professor Guptah wishes to study the effects of food deprivation on learning in rats. __**experimental**__

4. Dr. Cheung and her colleagues wish to study the aggressive behaviour of children in elementary school by observing children at play. __**observational**__

5. A group of researchers from a child advocacy group wishes to examine the relationship between exposure to televised violence and aggressive behaviour in children by asking parents to report on how much television their children watch, as well as what types of programs are watched. __**correlational**__

6. Dr. Beauchamp wishes to investigate the effects of a new training program at a fast-food restaurant on employees' job performance. __**experimental**__

7. A group of researchers wishes to study the organizational culture of successful schools. __**observational**__

8. Dr. Cortez is interested in the relationship between the different strategies used by a therapist and their effectiveness. __**correlational**__

9. A group of researchers is interested in the effects of caffeinated beverages on test performance. __**experimental**__

10. Dr. Courchene is interested in studying peer influence among high school students by recording their clothing choices and their hairstyles. __**observational**__

Notes

MODULE 1

Learning Activity Answer Key

Module 1 Learning Activity Answer Key

Learning Activity 1.1: Goals of Psychology

Read the following scenarios and determine to which of the four goals of psychology each one corresponds. Remember that the four goals are description, explanation, prediction, and control. Write your answer in the space after each statement.

1. A daycare worker has developed a teaching program that increases each child's self-esteem. __**control**__

2. The members of student council want to know why students don't want to go to school dances. __**explanation**__

3. As the manager at the local fast-food restaurant, you must interview high school students for a job opening using the questions that the head office has given you. __**prediction**__

4. As part of your Family Studies course, you are asked to observe a two-year-old child through a one-way mirror as he or she interacts with a roomful of toys. You document how many toys the child plays with and the length of time spent with each toy. __**description**__

5. Researchers have recently identified a gene that predisposes certain individuals to obesity. __**explanation**__

6. Some psychologists believe that more playground accidents occur among young children who watch violent cartoons. __**prediction**__

7. Studies demonstrate that Family Life education programs in high school should be mandatory because this type of education has led to reduced teenage pregnancy rates. __**control**__

8. Surveys show that women who graduate from college earn as much money per year as men who graduate from high school. __**description**__

Learning Activity 1.2: Psychologists at Work

Here are some examples of issues or questions that a psychologist would address. Determine the subfield of psychology that would study that issue or question. Write your answer in the space after each statement. Use the table in the *Psychologists at Work* section to help you choose the subfield of psychology. Sometimes there will be more than one answer for each question. Choose the one that you think is the best answer.

1. Joan, a Grade 12 student, is panicking. She needs to acquire better organizational skills and study habits in order to cope with the demands of her Grade 12 courses. __**counselling**__

2. At what age do children generally begin to develop an emotional attachment to their fathers? __**developmental**__

3. It is thought that watching pornographic films that depict violence against women can prompt aggressive behaviour in some men. __**social**__

4. What chemicals are released in the human body as a result of a stressful event? What are their effects on behaviour? __**biopsychology**__

5. Luke is unique in his manner of responding to crisis situations. He has an even temper and a positive outlook. __**personality**__

6. Eight-year-old Sarah's teachers are concerned that she has recently begun to withdraw socially and to show little interest in school work. They are seeking an explanation. __**school**__

7. Martin's job is demanding and stressful. He wonders if his lifestyle is making him more prone to certain illnesses, such as cancer and heart disease. __**health**__

8. A strong fear of crowds leads a young woman to seek treatment for her problem. __**clinical**__

9. What mental strategies are involved in solving complex word problems? __**cognitive**__

10. What teaching methods most effectively motivate elementary school students to successfully complete academic tests? __**educational**__

11. Jessica is asked to develop a management strategy that will encourage safer work practices in an assembly plant. __**industrial/organizational**__

Learning Activity 1.3: Psychological Perspectives

Look at the following statements that all have to do with studying anger. Decide which of the six perspectives might be involved and write your answer in the space after each statement. The perspectives are

- biological
- behavioural
- cognitive
- socio-cultural
- humanistic
- psychodynamic

1. Which perspective might study the brain circuits that produce the physical state of being "red in the face"? __**biological**__

2. Which perspective might view an angry outburst as an outlet for our unconscious thoughts? __**psychodynamic**__

3. Which perspective might study the facial expressions and body gestures that accompany anger? __**behavioural**__

4. Which perspective might study how our interpretation of a situation affects our anger and how our anger affects our thinking? __**cognitive**__

5. Which perspective might explore which situations produce the most anger and how expressions of anger vary across cultures? __**social-cultural**__

6. Which perspective would look at the personal values and social conditions behind exhibiting anger so that behaviour can be controlled and the person can reach their full potential? __**humanistic**__

Learning Activity 1.4: Determining the Variable

Identify the independent and dependent variables.

1. A group of social psychologists is interested in examining how the presence of bystanders affects whether or not students in a school will help another student who has fainted in the hallway.

   Independent Variable: __presence of bystanders__

   Dependent Variable: __whether or not they help__

2. A cognitive psychologist is doing a study on the effects of caffeine on memory in high school students.

   Independent Variable: __amount of caffeine__

   Dependent Variable: __memory__

3. A biopsychologist is interested in whether or not a new drug will alter the level of a neurotransmitter in the brains of rats.

   Independent Variable: __drug__

   Dependent Variable: __level of the neurotransmitter__

4. Your teachers are interested in whether or not distraction has an undesirable effect on memory.

   Independent Variable: __distraction__

   Dependent Variable: __memory__

5. The band teacher is interested in the effects of music on academic performance.

   Independent Variable: __music__

   Dependent Variable: __academic performance__

6. A group of psychologists is studying the effects of human contact on learning in rats.

   Independent Variable: __human contact__

   Dependent Variable: __learning__

7. The math teacher has developed a new method to teach children algebra.

   Independent Variable: __math program__

   Dependent Variable: __academic program__

8. A group of psychologists is interested in determining whether or not dancing will help alleviate mild depression.

   Independent Variable: __dancing__

   Dependent Variable: __levels of depression__

Learning Activity 1.5: Name That Method

Read the following scenarios and determine if the method used is correlational, experimental, or observational.

1. Professor Black is interested in understanding the relationship between self-esteem and anxiety in group situations. __**correlational**__

2. Researchers at a university are interested in studying relationships among employees at a specific airplane-manufacturing company. These researchers decide to observe the interactions of co-workers in the factory. __**observational**__

3. Professor Guptah wishes to study the effects of food deprivation on learning in rats. __**experimental**__

4. Dr. Cheung and her colleagues wish to study the aggressive behaviour of children in elementary school by observing children at play. __**observational**__

5. A group of researchers from a child advocacy group wishes to examine the relationship between exposure to televised violence and aggressive behaviour in children by asking parents to report on how much television their children watch, as well as what types of programs are watched. __**correlational**__

6. Dr. Beauchamp wishes to investigate the effects of a new training program at a fast-food restaurant on employees' job performance. __**experimental**__

7. A group of researchers wishes to study the organizational culture of successful schools. __**observational**__

8. Dr. Cortez is interested in the relationship between the different strategies used by a therapist and their effectiveness. __**correlational**__

9. A group of researchers is interested in the effects of caffeinated beverages on test performance. __**experimental**__

10. Dr. Courchene is interested in studying peer influence among high school students by recording their clothing choices and their hairstyles. __**observational**__

Notes

MODULE 2

Biopsychological Theme

This module is divided into four topics. Each topic will include one or more lessons.

- Topic 1: Biological Bases of Behaviour
  - Lesson 1: Neural and Hormonal Systems
  - Lesson 2: The Brain
  - Lesson 3: Nature and Nurture in Psychology
- Topic 2: Sensation and Perception
  - Lesson 4: Sensation
  - Lesson 5: Perception
- Topic 3: Motivation and Emotion
  - Lesson 6: Motivation
  - Lesson 7: Emotion
- Topic 4: Stress, Coping, and Health
  - Lesson 8: Stress and Health
- Module 2 Summary
- Module 2 Learning Activity Answer Key

LESSON 1: NEURAL AND HORMONAL SYSTEMS

Lesson Introduction

To understand how the brain works, you must first understand the building blocks which make up the brain. This is the individual **nerve cell or neuron**. Chemicals found in and around neurons are known to be involved in pleasure, pain, excitement, depression, sex, and hunger. Essentially, neurons are involved in everything that the brain does.

In this lesson, you will learn about the structure, function, and organization of the nervous system. You will also learn how the endocrine glands are linked to the nervous system.

Psychologists focus on these two systems (nervous and endocrine) because both systems allow for communication and information processing in the body.

Neurons: Building Blocks of the Nervous System

Our body's electrochemical communication is the **nervous system**. This system, through the brain, tells your body what to do. Your nervous system is made up of cells. These highly specialized cells are called **neurons**. A neuron

1. receives information from another neuron

2. carries received information

3. passes on the received information to the next neuron in line

Since the neuron can move and process information, every behaviour, thought, and emotion you experience depends on the neuron.

Neurons come in a variety of shapes and sizes. The first type of neuron ever studied was the **motor neuron**. This type of neuron stimulates muscle fibres to produce movement.

All neurons have the same basic structures. They are called the dendrites, soma or cell body, and the axon. The order in which information travels in the neuron is from dendrites to soma or cell body, and, finally, to the axon.

Dendrites

A neuron has endings or receiving ends known as **dendrites**. They are bushy and look like the branches of a tree. Their purpose is to receive information from other neurons and send that information toward the cell body or soma.

Cell Body or Soma

The thickest part of the neuron is the **cell body or soma**. The cell body is not responsible for transmitting any information. Its purpose is to keep the cell healthy and functioning properly because it contains the cell nucleus.

Axon

The **axon** is an extension that transmits messages away from the cell body to other neurons, muscles, or glands. The length of axons varies. They are sometimes short (if information needs to go a short distance) or they can be over a metre in length.

Some axons are covered with a fatty material known as **myelin**. The function of this myelin sheath is to speed up messages traveling down the axon. Damage to the myelin can have serious consequences on behaviour. In the presence of multiple sclerosis (MS), for instance, the myelin disintegrates, which leads to jerky, uncoordinated movement in the affected person.

The neuron ends with axon terminals, also called **terminal buttons**. It is in these axon terminals that neurotransmitters are stored. You will learn more about neurotransmitters later in the lesson.

The main function of the neuron is to transmit an impulse. This is called **"firing"**.

| Figure 2.1 | **Neuron** |

Figure 2.1: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 80.

Neural Communication

Neurons communicate by sending signals called **nerve impulses** or neural impulses through the axons that make up a nerve. A **nerve** is simply a bundle of axons. Because each axon may branch into a whole tree and because nerve impulses go down each branch when an axon divides, a single neuron may send signals to thousands of other neurons. Meanwhile, the dendrites and soma of that single neuron can receive information from thousands of other neurons. The nervous system is one big network of neurons with each neuron connecting to other neurons.
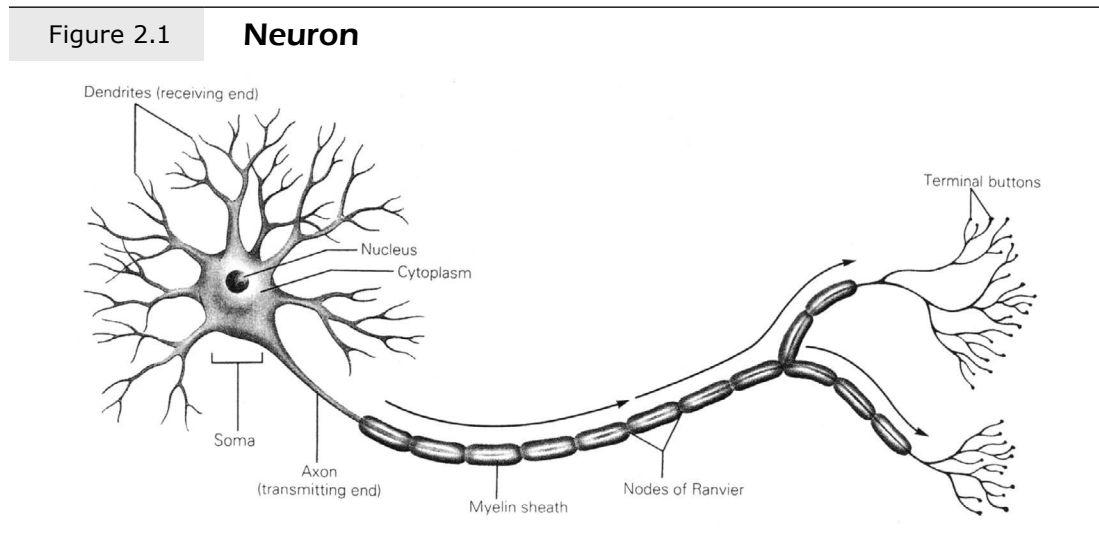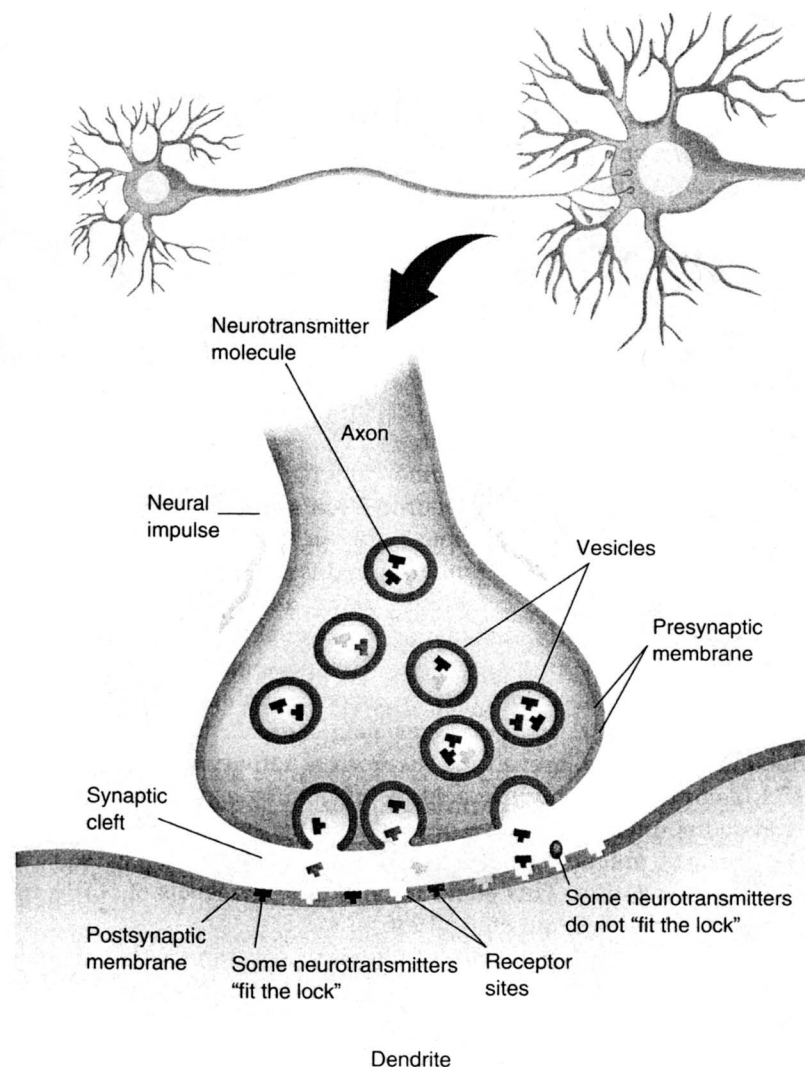
| Figure 2.2 | **Neural Communication** |

Figure 2.2: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 87.

Neural Impulse

When a neuron "fires", a tiny electrical charge works its way from the dendrites to the axon terminals. This charge is called an **action potential**.

Each action potential is followed by a brief recharging phase called the **refractory period**. The neuron can't fire until this phase is over. When the neuron is recharged and ready to fire again, a resting potential exists.

It is important to know that neuron firing follows an **all-or-nothing principle**. This means that a neuron will always fire with the same intensity, regardless of whether there is a strong stimulation or a weak stimulation at the cell's dendrites. The stimulation is provided by **neurotransmitters** which are chemical messengers.

Many people liken neuron firing to toilet flushing. Here are some of the similarities:

- When you flush a toilet, an impulse is sent down the sewer pipe.
- There is a short delay after flushing during which the toilet cannot be flushed again until the tank is refilled with water. A toilet, just like a neuron, has a refractory period.
- When the toilet is refilled, it can be flushed again. A toilet, just like a neuron, has a resting potential.
- The toilet will flush with the same intensity no matter how much force you place on the handle. Just like a neuron, the toilet operates on the all-or-nothing principle.

Communication between Neurons

Since you now know how information passes down the length of a single neuron, you now need to learn how it gets from one neuron to the other. You may be surprised to learn that neurons actually never touch each other. There is a fluid-filled space between neurons called a **synapse**. Action potentials don't jump across the synapse. Neurotransmitters carry the messages across the synapse to other neurons.

Neurotransmitter molecules have different shapes and can only be received by specific receptor sites on the dendrites of the next neuron. Essentially, it is like a key and lock system. A key (neurotransmitter) can only open certain locks (receptor sites).

When the neurotransmitter molecules reach the receptor site, only one of two things can happen.

- If the arrival of the neurotransmitter makes the receiving neuron likely to fire, generating an action potential, then it has an **excitatory effect**.
- If the arrival of the neurotransmitter makes the receiving neuron less likely to fire, not generating an action potential, then it has an **inhibitory effect**.

An excitatory effect is like a green light and an inhibitory effect is like a red light.

Neural Chain

The **neural chain** is the path information follows when your nervous system gathers information, translates it into a form your brain can process, moves it to the brain for processing, and lets your body take the necessary actions.

Cells in your sensory systems gather information and turn it into nerve impulses. These amazing cells have the ability to take energy of all different forms and turn it into neural impulses your brain can understand. For example, your eyes have receptor cells that take light energy and turn it into nerve impulses. Your ears also have similar cells. By itself, your brain cannot detect light or sound.

Neurons and neurotransmitters move the impulses along sensory nerves to appropriate areas of your brain. Because the sense organs aren't located in the brain, your nervous system must move the information your receptor cells receive. The nerves that connect the sense organs to the brain and spinal cord are called **sensory nerves**.

Interneurons in your brain and spinal cord process the information and determine whether an action is necessary. These interneurons are extremely important because your brain must process information about what you see, hear, taste, smell, and feel. The brain has to deal with it all and make appropriate decisions.

The brain uses **motor nerves** to transmit information to parts of your body that can react appropriately. Without motor nerves, and the muscles and glands that they attach to, your brain couldn't accomplish anything.

Simple Reflex

The most basic neural chain is the **reflex**. The action takes place without the brain even being involved.

Let's take the example of touching a hot stove.

- When you place your hand on the heat element, your skin receptors detect the heat and generate nerve impulses.
- Sensory nerves carry the information to the spinal cord.
- The interneurons in the brain and the spinal cord process the information.
- Motor neurons carry the information to remove your hand from the hot element and the muscles in the hand contract to pull your hand off the stove.

Another example is the knee-jerk reaction when you stimulate the area just below your kneecap. Your leg will jerk without you consciously moving it.

Figure 2.3   Knee-Jerk Reflex

❷ Sensors detect a sudden stretch in the quadriceps.

❸ **Sensory neurons** convey the information to the spinal cord.

❹ The sensory neurons communicate with **motor neurons** that supply the quadriceps. The motor neurons convey signals to the quadriceps, causing it to contract and jerking the lower leg forward.

❶ The reflex is initiated by tapping the tendon connected to the quadriceps (extensor) muscle.

Quadriceps muscle

Cell body of sensory neuron in dorsal root ganglion

Gray matter

White matter

Hamstring muscle

❺ Sensory neurons from the quadriceps also communicate with **interneurons** in the spinal cord.

❻ The interneurons inhibit motor neurons that supply the hamstring (flexor) muscle. This inhibition prevents the hamstring from contracting, which would resist the action of the quadriceps.

Spinal cord (cross section)

● Sensory neuron
● Motor neuron
● Interneuron

Neurotransmitters

As was mentioned several times already in this lesson, neurotransmitters are chemical messengers that travel across the synapse from one neuron to another. There are four major neurotransmitters. They are acetylcholine (ach), norepinephrine, dopamine, and serotonin.

Acetylcholine

Acetylcholine, or ach, is a neurotransmitter that triggers muscle contraction and affects learning and memory. It is present in every synapse of motor nerves. People who suffer from Alzheimer's disease have shown deterioration in ach-producing neurons.

Norepinephrine

Norepinephrine is a neurotransmitter that resembles adrenaline in its action. It is secreted into the bloodstream during moments of exertion or stress.

Dopamine

Dopamine is a neurotransmitter that affects learning, attention, and emotion. People who suffer from schizophrenia have too much dopamine activity, and people who suffer from Parkinson's disease have an abundance of dopamine.

Serotonin

Serotonin is a neurotransmitter that affects hunger, sleep, arousal, and mood. People who suffer from depression have shown low levels of serotonin.

Structure and Function of the Nervous System

Our nervous system is divided into different categories based on function. The two main categories are the **central nervous system** and the **peripheral nervous system**.

| Figure 2.4 | **The Nervous System** |
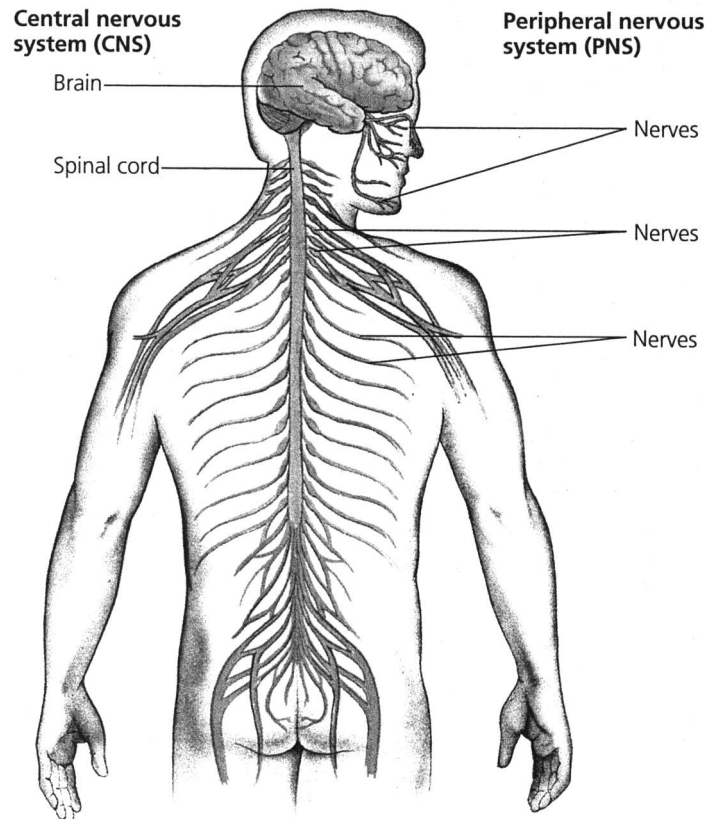
Central Nervous System

The **central nervous system (CNS)** includes the brain and spinal cord. Both of these are enclosed in bone to protect them. This is an indication of their importance. The brain is where most information processing takes place. The **spinal cord** is the main pathway information follows as it enters and leaves the brain. It is a bundle of nerves that runs through the centre of the spine.
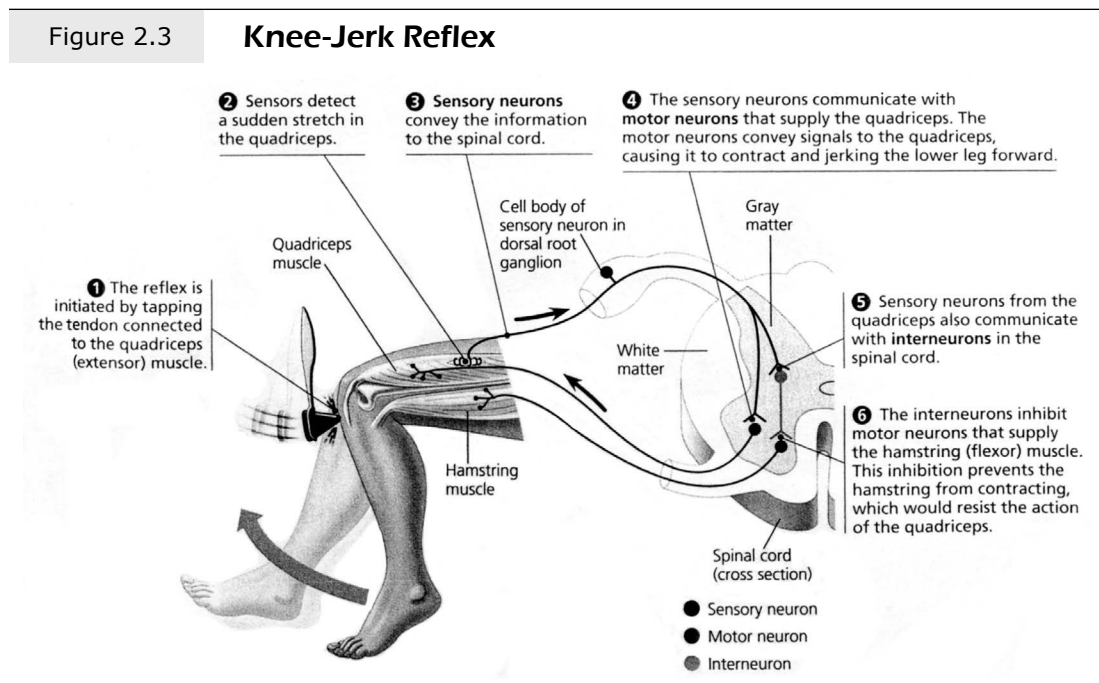

Figure 2.4: Campbell, Neil A., and Jane B. Reece. Biology. 7th ed. San Francisco, CA: Pearson Education, Benjamin Cummings, 2005. 1026.

Peripheral Nervous System

The **peripheral nervous system (PNS)** includes all of the other nerves in your body; in other words, all of the nerves not enclosed in bone. The nerves in the PNS feed into and branch out of the brain and spinal cord. The PNS is further divided into two systems: the somatic nervous system and the autonomic nervous system.

Somatic Nervous System

The **somatic nervous system** contains the motor nerves you use to voluntarily activate muscles. If you want to stand up from a sitting position, you get the idea using your central nervous system but you rely on the motor and sensory nerves of your somatic nervous system to carry the CNS's commands to your muscles telling them to straighten and allowing you to stand up.

Autonomic Nervous System

The **autonomic nervous system** controls the automatic functions of your body. It controls the heart, lungs, internal organs, and glands. It therefore controls your breathing, blood pressure, and digestion. The autonomic nervous system is further split into two divisions: the sympathetic nervous system and the parasympathetic nervous system. These two divisions work together.

- The **sympathetic nervous system** is in charge of arousal.
  - It mobilizes our body to respond to stress.
  - It carries messages to the organs, glands, and muscles to be on alert.
  - It increases heart rate, blood pressure, and rate of breathing, while slowing down digestion.
  - This is the **fight-or-flight response**.
- The **parasympathetic nervous system** is responsible for slowing down our body after a stress response.
  - It returns heart rate, blood pressure, rate of breathing, and digestion back to normal.

Figure 2.5

The Autonomic Nervous System

Parasympathetic
- Constricts pupil
- Inhibits tear glands
- Increases salivation
- Slows heart
- Constricts bronchi
- Increases digestive functions of stomach
- Increases digestive functions of intestine
- Contracts bladder

Sympathetic
- Stimulates tear glands
- Dilates pupil
- Inhibits salivation, increases sweating
- Accelerates heart
- Dilates bronchi
- Decreases digestive functions of stomach
- Secretes adrenalin
- Decreases digestive functions of intestine
- Inhibits bladder constriction

Chain of sympathetic ganglia

Spinal cord

Let's review all of the divisions of the nervous system by looking at them once again.

Figure 2.6

Divisions of the Nervous System

- Nervous system
  - Central nervous system (brain and spinal cord)
  - Peripheral nervous system (neural tissue outside brain and spinal cord)
    - Somatic nervous system (sensory and motor nerves, voluntary)
    - Autonomic nervous system (internal systems, involuntary)
      - Sympathetic division ("troubleshooter")
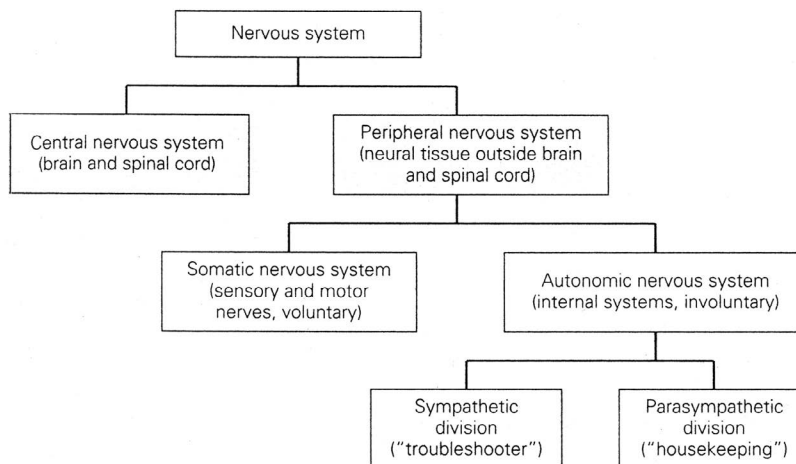   - Parasympathetic division ("housekeeping")

Figure 2.5: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 70.

Figure 2.6: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 69.

Endocrine System

As was mentioned at the beginning of the lesson, there are two major body systems responsible for communicating information. This makes them critical to the field of psychology. One is the nervous system (which you have just learned about) and the second is the **endocrine system**. The endocrine system includes many glands that secrete hormones which affect different biological processes in the body. **Hormones** are chemical messengers, like neurotransmitters, but they are produced by the endocrine glands and circulated in the blood.

There are several major glands: the pituitary gland, the thyroid gland, the adrenal glands, and the ovaries and testes.

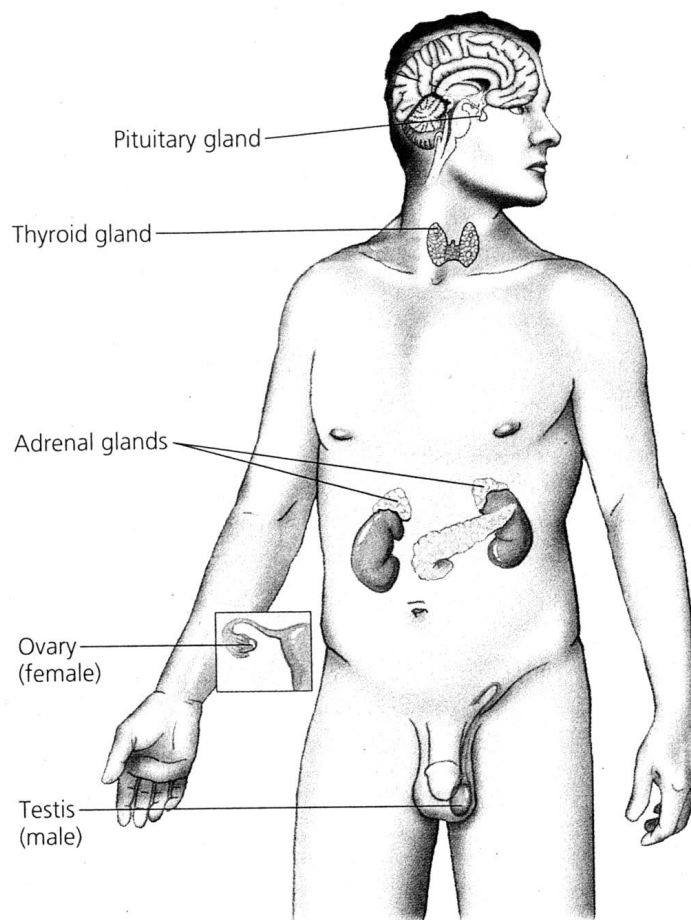| Figure 2.7	*The Endocrine Glands*

Pituitary gland

Thyroid gland

Adrenal glands

Ovary (female)

Testis (male)

Figure 2.7: Campbell, Neil A., and Jane B. Reece. Biology. 7th ed. San Francisco, CA: Pearson Education, Benjamin Cummings, 2005. 950.

Pituitary Gland

The **pituitary gland** is the most important of all the glands and is often referred to as the "master gland".

- It is located at the base of the brain.
- It is connected to a part of the brain known as the hypothalamus.

The brain may call on the pituitary gland to release hormones that stimulate or inhibit the release of other hormones from other endocrine glands. This is why it is called the master gland.

Thyroid Gland

The **thyroid gland** is located in the neck and helps regulate our energy level.

Adrenal Glands

The **adrenal glands** are located on the kidneys. They release epinephrine and norepinephrine which enhance strength and endurance in emergency situations.

Ovaries and Testes

The **sex glands**—the **ovaries** in females and the **testes** in males—release hormones that influence emotional and physical development. The primary male hormone is **testosterone** and the primary female hormone is **estrogen**. Males and females alike both have these hormones present in their systems.

Lesson Summary

This lesson focused on two biological systems of vital importance to the field of psychology because they are both responsible for communicating information.

- In the first system, the cells that are unique to the nervous system are the neurons.
- The neuron is comprised of the dendrites, soma, axon, and terminal buttons.
- Neurons can either fire or not fire. Nonetheless, they always fire with the same intensity. This firing is called an action potential.
- The lesson explained how a neural impulse is generated, the role of neurotransmitters in neural communication, and the steps of the neural chain.
- The many divisions of the nervous system were explained according to the function or role that they play.
- Finally, the major body system that is second in importance in the field of psychology—the endocrine system—was presented.

Learning Activity 2.1: Sympathetic and Parasympathetic Nervous Systems

Think about a time when your sympathetic nervous system was aroused and answer the following questions.

Where were you?

_____

_____

_____

_____

_____

_____

What were you doing?

_____

_____

_____

_____

_____

_____

Were you in danger?

_____

_____

_____

_____

_____

_____

continued

Learning Activity 2.1: Sympathetic and Parasympathetic Nervous Systems (continued)

What did it feel like?

_____

_____

_____

_____

_____

_____

Did your parasympathetic system kick in?

_____

_____

_____

_____

_____

_____

What happened?

_____

_____

_____

_____

_____

_____

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

LESSON 2: THE BRAIN

Lesson Introduction

Your brain is a true wonder of nature that we take for granted. Pound for pound, it is the most amazing and complex piece of matter in the universe. It sits behind the protective shell of the skull in fluid called cerebrospinal fluid. It is a living system made up of billions of individual nerve cells called neurons. In this lesson, you will learn about the brain structures that are important to the field of psychology. You will also learn about the methods that are available to study the brain.

Lower Level Brain Structures

The innermost structures of the brain are similar to the brains of all mammals. They evolved first. They are called **lower level brain structures**. They include the brainstem, the thalamus, the cerebellum, and the limbic system.

Figure 2.8   **Brain Structures**
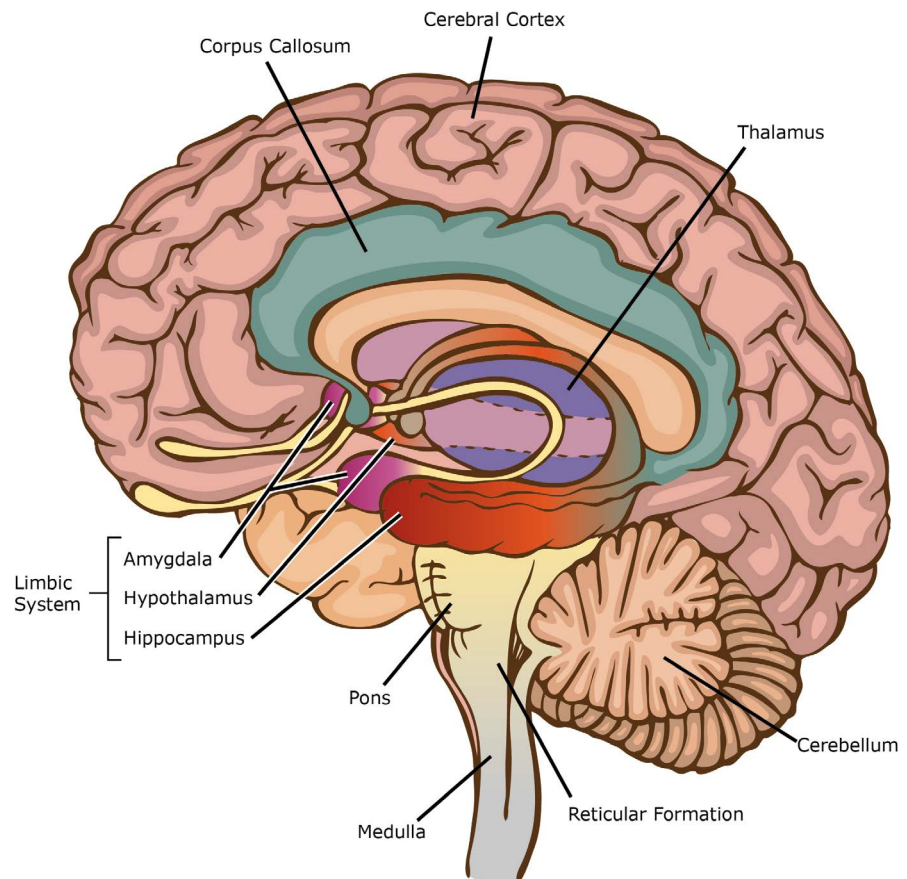
Brainstem

The **brainstem** is the oldest, most basic part of the brain. It is located where the spinal cord becomes part of the brain. The brainstem is responsible for automatic survival functions.

As you move up the spinal cord toward the brain, the first area is the **medulla**. It is in charge of life support; most notably, breathing, circulation, and swallowing. If you damaged this area, it would lead to your death.

Another part of the brainstem is called the **reticular formation**. It is a network of nerves that goes from the spinal cord to the brain. It is important in controlling wakefulness and arousal. If you damaged this area you would be in a coma.

Thalamus

The **thalamus** is on top of the brainstem in the very middle of everything. It is the sensory switchboard. Incoming information from your senses funnels into the thalamus. The thalamus then distributes the information to the proper regions of the brain for processing. It is often likened to old-fashioned telephone switchboard operators.

Cerebellum

The **cerebellum** extends from the back of the brain. It is often referred to as the "little brain". It works with other regions of the brain to control balance, muscle coordination, and memory (for knowing how to use your body to do things like walk, sit, and so on). It is important in our ability to walk, run, and write smoothly. If you damaged this part of the brain, you would still be able to walk, run, and write, but it would be without much coordination.

Limbic System

The last of the lower level brain structures is the **limbic system**. It is located around the thalamus. Three structures make up this system: the hypothalamus, the hippocampus, and the amygdala. The functions of the limbic system help to control memory, fear, aggression, hunger, and thirst.

- The **hypothalamus** is located just under the front of the thalamus. It helps control hunger and thirst, the fight-or-flight response in stressful situations, and body temperature. It also plays a large role in the experience of emotion, pleasure, and sexual function.
- The **hippocampus** wraps around the thalamus and plays an important role in processing new memories.

- The **amygdala** is important for controlling emotion, especially emotions such as fear and anger.

Cerebral Cortex

The wrinkled outer part of the brain is called the **cerebral cortex**. It is the information processing centre. The wrinkles, which are called **fissures**, allow more brain tissue to be packed into a small space. There can be an estimated thirty million neurons in a tissue layer that is only about one third of a centimetre. If the cortex was not wrinkled, our skull would have to be about three square metres to hold all of the neurons and neural connections.

The cerebral cortex is divided into two halves called **hemispheres**: left and right. They look like mirror images of each other. The cerebral cortex has eight different areas called **lobes**. There are four in each hemisphere. They are called the frontal lobes, parietal lobes, temporal lobes, and occipital lobes.

Figure 2.9   **Lobes and Hemispheres of the Cerebral Cortex**

Side View

Corpus Callosum
Frontal Lobe   Motor Cortex   Somato-Sensory Cortex
Parietal Lobe
Broca's Area
Occipital Lobe
Visual Cortex
Temporal Lobe
Wernicke's Area
Front — Rear

Top View

Corpus Callosum
Left Hemisphere   Right Hemisphere
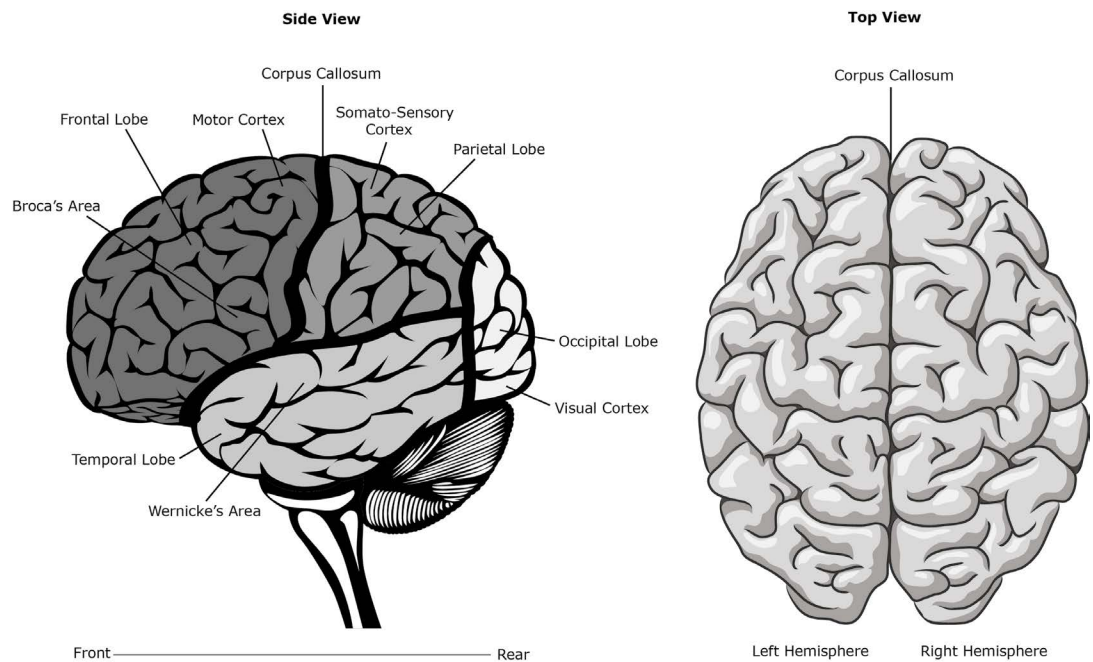
Frontal Lobes

The **frontal lobes** are the large areas that are located at the top front part of the brain, behind the eyes. It is believed that this part of the brain is responsible for abstract thought and emotional control. The ability to judge and plan is due to the frontal lobes.

This area includes **Broca's area**. It is important in your ability to speak. You will learn more about this topic later in the lesson.

The **motor cortex** is located at the back of the frontal lobes. It is responsible for sending signals to our muscles that control our voluntary movements.

It is interesting that the top of the body is controlled by the neurons at the bottom of this cortex (by the ears), progressing down the body as you go up the cortex. This means that the top of the motor cortex controls the feet and toes. The motor cortex in your right hemisphere controls movement on the left side of the body and the motor cortex in your left hemisphere controls movement on the right side of your body.

Another interesting fact is that the bigger parts of your body are not controlled by the largest area on the motor cortex.

Parietal Lobes

The **parietal lobes** are located behind the frontal lobe; nonetheless, they are still on the top part of the brain.

The parietal lobes contain the sensory cortex, also called the **somato-sensory cortex**. This area receives incoming touch sensations from the rest of the body.

This area is organized like the motor cortex of the frontal lobes. The top of the sensory cortex receives sensations from the bottom of the body, progressing down the cortex to the bottom, which processes signals from our face and head.

Temporal Lobes

The **temporal lobes** are located in the vicinity of your ears. The function of these lobes is to process sound sensed by the ears.

- Sound received by the left ear is processed in both of the temporal lobes. Likewise, sound received by the right ear is also processed in both of the temporal lobes.
- Another specialized area, called **Wernicke's area**, is located in this lobe. You will learn more about this later in the lesson.

Occipital Lobes

The **occipital lobes** are at the very back of the brain. They are the farthest away from the eyes. This is strange because one of the major functions of this area is to interpret messages from our eyes.

- Impulses from the retinas of our eyes are sent to the **visual cortex** in these lobes.
- It is interesting to know that impulses from the right half of each retina are processed in the visual cortex in the right occipital lobe, and impulses from the left half of each retina are processed in the visual cortex in the left occipital lobe.

Hemispheric Differences

Do you remember that the cerebral cortex is divided into two hemispheres: right and left? These hemispheres are often referred to as "right brain" and "left brain". This is deceiving because you only have one brain, not two. The truth is that your brain is divided into two hemispheres. These two hemispheres communicate with each other. They can do this because there is a band of neural fibres that connects the two together. This band of fibres is called the **corpus callosum**.

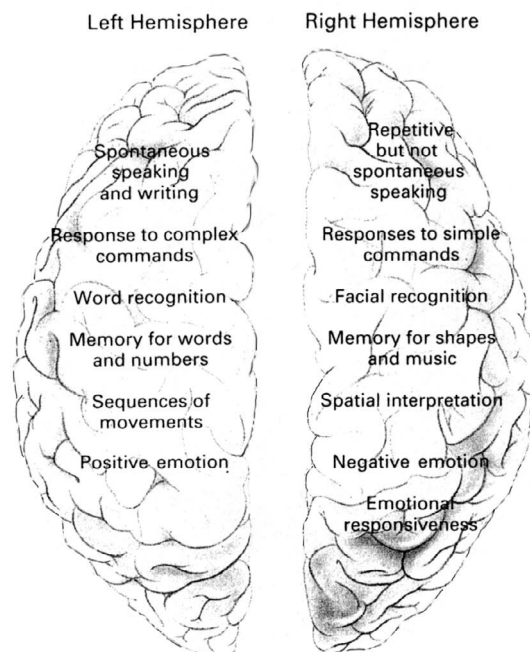| Figure 2.10	**Hemispheric Differences**

Figure 2.10: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 94.

Language and Spatial Abilities

Each hemisphere of the brain has specific abilities. Language is the best example of a difference between the right and left hemispheres.

There are two language areas located in the **left hemisphere**. They are the two that were mentioned earlier in the lesson: Broca's area and Wernicke's area.

Broca's Area

Broca's area is located in the frontal lobe. It is involved with the muscle movement that is needed in order to speak. If you damage this area, you can form ideas but you can't turn those ideas into speech that makes any sense.

Wernicke's Area

Wernicke's area is located in the temporal lobe. It is involved in your ability to understand what someone else says.

The **right hemisphere** has its own specific abilities. It has spatial abilities. This means that it lets you organize things in a given space; for instance, judging distances. It also helps you make connections between words, like connecting ideas and names of things.

Split Brain

Much of what we know about the functions of the right and left hemispheres comes from studies of people who have damage or disease in parts of their brain. In some patients, the two hemispheres have been split apart from each other at the corpus callosum. Splitting the two hemispheres has been helpful in controlling seizures in epileptic patients.

Learning Activity 2.2: Brain

The left hemisphere of the brain is primarily responsible for language, symbols, logic, and math.

The right hemisphere of the brain is primarily responsible for spatial, musical, and emotional tasks.

If the following behaviour relies primarily on the left hemisphere, put an L on the line beside the behaviour. Conversely, if it relies primarily on the right hemisphere, put an R on the line. If it involves both hemispheres, explain what each hemisphere does in the space under the behaviour.

1. Studying psychology concepts _____

   _____
   _____
   _____

2. Drawing a map _____

   _____
   _____
   _____

3. Daydreaming about what you are going to do later _____

   _____
   _____
   _____

4. Listening to a rock concert _____

   _____
   _____
   _____

5. Thinking about the party tomorrow night _____

   _____
   _____
   _____

continued

6. Reading your text messages _____

_____

_____

_____

7. 6 x 4 – 2 + 5 _____

_____

_____

_____

8. Redecorating your room _____

_____

_____

_____

9. Doodling _____

_____

_____

_____

10. Doing this assignment _____

_____

_____

_____

Check the answer key.

Brain Plasticity

By now, you should realize that the brain is an amazing thing. Did you know that brain tissue has the ability to be modified or changed? This is called **plasticity**. The ability to change is greatest in childhood. The older you are, the harder it is for your brain tissue to assume new functions. Scientists know this from case studies where damage has occurred because of injury or disease. Before we look at the methods that scientists use, let's incorporate all the information about brain structure and function in one example.

Brain Structure and Function: Example

Let's look at how different brain structures are involved in playing a card game.

The table below identifies how specific brain sites would be involved in playing a card game. The general brain function is identified and then how that brain site is involved in the card game is described.

Brain Site	Function	Involvement
Hypothalamus	Maintains autonomic nervous system	Regulates body temperature and appetite (popcorn and drinks)
Occipital Lobe	Processes visual information	Registers what cards have been dealt and the body language of the opposing players
Frontal Lobe	Controls arousal and attention	Maintains attention during boring plays
Cerebellum	Coordinates voluntary movement and balance	Holds you upright and supports appropriate card selection
Parietal Lobe	Processes sensory input through sensory cortex	Helps you shift position when some body parts go to sleep
Corpus Callosum	Connects the two hemispheres	Keeps both eyes on all the card players.
Medulla	Controls heartbeat and breathing	Increases heart rate and breathing during exciting play
Temporal Lobe	Processes auditory information	Monitors the voices of the other players
Frontal Lobe	Manages speaking and muscle movement, and makes plans and judgments	Allows you to speak to the other players and judges whether or not you are pleased with the other players
Thalamus	Directs messages to the sensory areas in the cortex	Coordinates the images of the cards with any motor movements
Amygdala	Involved in emotion	Manages your emotions during the game
Hippocampus	Processes memories for storage	Helps you remember how to play the particular card game

Learning Activity 2.3: Superheroes

Science fiction writers are always searching for good plots that will capture the interest of their readers. Quite often, they transform normal human beings into superhuman beings—some good and some evil. For example, because of a laboratory accident, a person might develop superhuman strength.

In this learning activity, you are to create a superhero by pretending that it is possible to magnify or diminish the abilities of a specific region of the human brain. Identify the area that would have to be altered and then create a simple storyline in which the special ability would be useful.

Name of superhero

_____

What super ability does this superhero possess?

_____

_____

_____

_____

_____

_____

What brain structure is modified?

_____

_____

_____

_____

_____

_____

_____

Learning Activity 2.3: Superheroes (continued)

What simple plot would encourage this superhero to come to the rescue?

_____

_____

_____

_____

_____

_____

_____

_____

There is no answer key for this learning activity as you are to apply the information covered in this lesson to the development of a superhero character.

Studying the Brain

A big challenge with respect to brain research has been in creating ways of determining brain functions. Some of the methods scientists have used are described below.

Accidents

In 1848, a railroad worker named Phineas Gage was involved in an accident that damaged the front part of his brain. His doctor took notes on the brain damage and how his behaviour and personality changed. Accidents like this one provide researchers with clues about brain function. Gage became highly emotional and impulsive. This was the first clue that the frontal lobe was involved in emotional control.

Figure 2.11	**_Skull of Phineas Gage_**

Lesions

Lesioning is the removal or destruction of part of the brain. Ethically, this is never done as an experiment. Surgeons lesion parts of the brain if they think that this type of surgery will be beneficial to the patient. An example of this is the removal of a brain tumour.

The most famous example of a lesion is the frontal lobotomy. In the past, surgeons removed parts of the frontal lobe in order to control patients with a mental disability. It resulted in the patients becoming calmer.

Electroencephalogram (EEG)

The **EEG** detects brain waves by recording electrical voltages. Wire electrodes are hooked up to a person and when that person is stimulated, performs an action, or thinks about something, there is a change in the pattern of the brain wave. It is because of this method that we know about the different stages of consciousness. This method is used in sleep research to identify the different stages of sleep and dreaming.

Figure 2.12 **Stages of Sleep**

Figure 2.12: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 116.

Computerized Axial Tomography (CAT scan)

The **CAT scan** is like an X-ray. It uses several X-ray cameras that rotate around the brain. When all of these pictures are combined you get a three-dimensional picture of the structures of the brain. It doesn't tell you anything about the function of the brain structures.

| Figure 2.13 | **CAT Scan** |

Magnetic Resonance Imaging (MRI)

The **MRI** is like the CAT scan because both give you a detailed picture of the brain. The MRI uses magnetic fields to measure the thickness (or density) and location of brain material.

Figure 2.14	*Magnetic Resonance Imaging (MRI)*
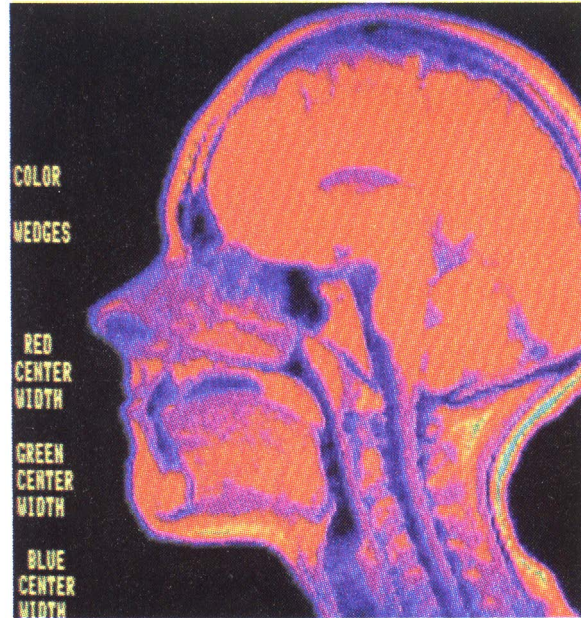
COLOR
WEDGES

RED
CENTER
WIDTH

GREEN
CENTER
WIDTH

BLUE
CENTER
WIDTH

Positron Emission Tomography (PET) scan

The **PET scan** lets researchers see what areas of the brain are most active when someone is performing certain tasks. It measures how much of something the brain is using. This could be glucose, neurotransmitters, drugs, or oxygen.

The scan takes place in real time. This means that the researchers can see what is going on as the patient thinks about certain things. It has shown researchers which areas of the brain are activated by seeing a word, hearing a word, speaking a word, or thinking a word.
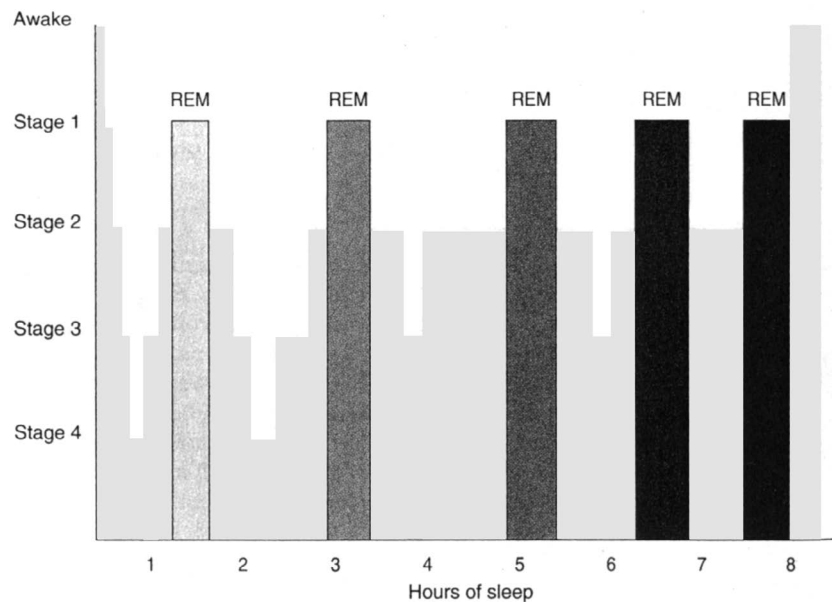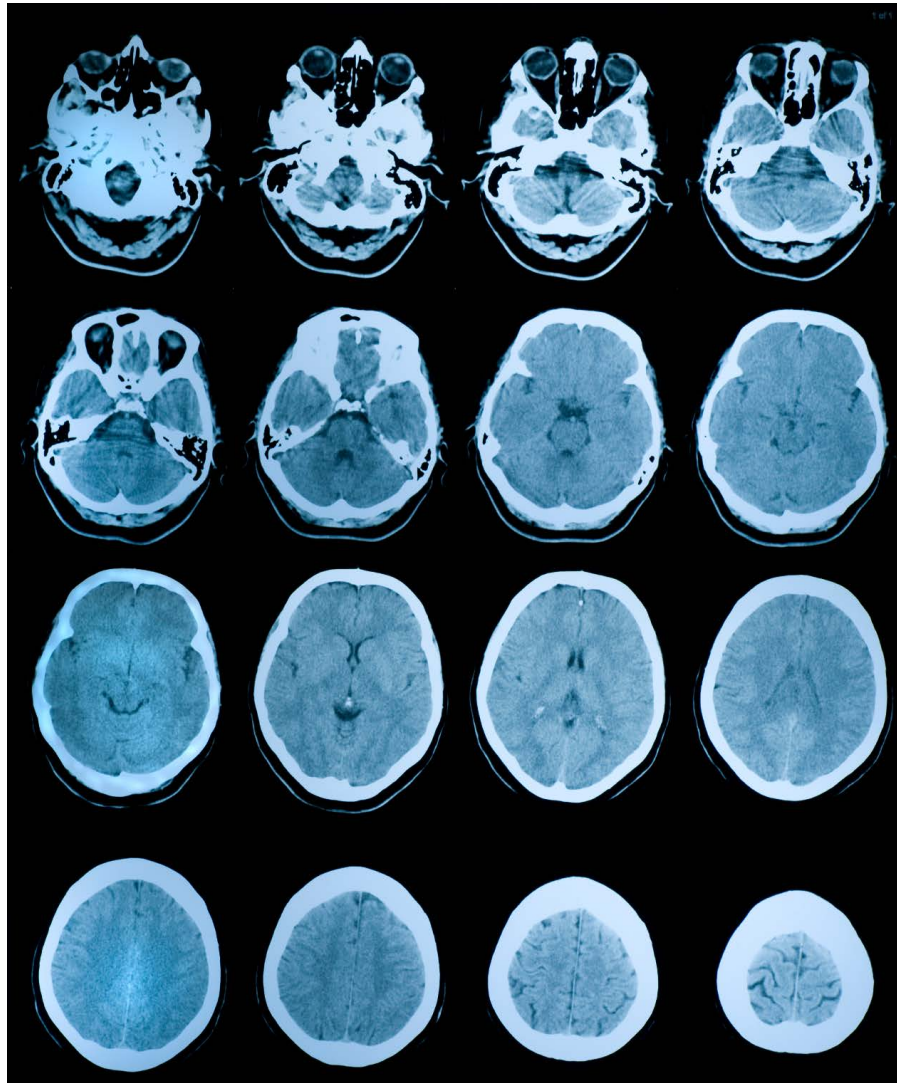
Figure 2.15	**PET Scan**
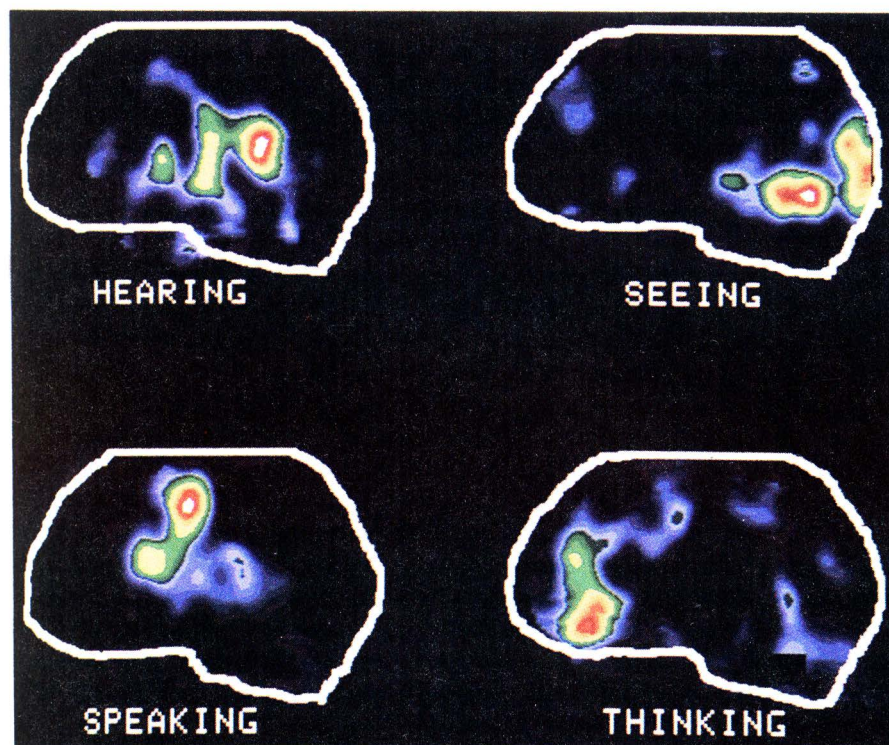
Figure 2.15: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 67.

Functional Magnetic Resonance Imaging (fMRI)

The **fMRI** combines the technology of the MRI (magnetic resonance imaging) and the PET (positron emission tomography) scan. It shows details of brain structure and gives information about blood flow in the brain. This provides insight about brain activity during tasks that require a lot of thinking.

Figure 2.16	*fMRI*
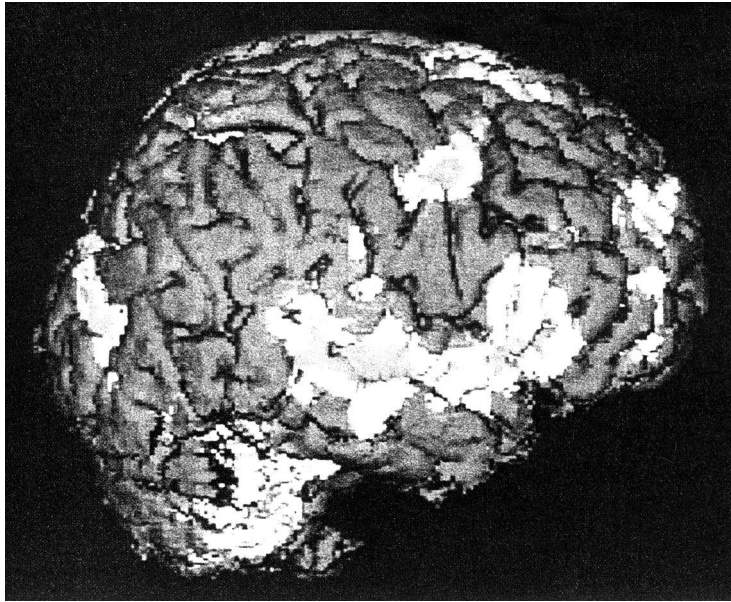
Lesson Summary

The brain is often described as the most complex system in the universe. It is composed of lower level brain structures and the cerebral cortex.

- Lower level brain structures include the brainstem, reticular formation, thalamus, cerebellum, and limbic system (hypothalamus, hippocampus, and amygdala).

- The cerebral cortex is divided into two hemispheres that contain frontal, parietal, temporal, and occipital lobes.

- The lobes also contain some specialized areas such as the motor cortex, the sensory cortex, Broca's area, and Wernicke's areas.

- It is through case studies and brain scanning tools that researchers have gained insight into the structure and functions of the brain. These brain scanning tools can study the brains of healthy individuals without surgically invading their bodies.

Assignment 2.1: Brain Injury (9 marks)

Describe the brain injury and its impact on behaviour for each of the three situations. Identify the precise area of the brain that has been damaged *(1 mark)* and explain what methods could be used to detect the damage *(2 marks)* for the three scenarios.

1. Linnea fell while skiing this past winter. When she fell, she hit the back of her head. She now has difficulty moving about. Her movements are jerky and she has to concentrate hard to make even the simplest of movements.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

2. Carlos was in a car accident recently. He seems okay except that he has trouble remembering things after the accident. He can remember things that happened in his life prior to the accident but his difficulty appears to be in forming new memories.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

continued

Assignment 2.1: Brain Injury (continued)

3. To help pay her way for the school's band trip to Brandon, Shawna took a part-time job in the evenings. While she was working, there was a fire and an explosion. The explosion caused a small piece of metal to lodge deeply in her left frontal lobe. She made a complete recovery except that she can't express herself at all; she can only utter one or two words.

_____

_____

_____

_____

_____

_____

_____

_____

_____

LESSON 3: NATURE AND NURTURE IN PSYCHOLOGY

Lesson Introduction

Nature and nurture is one of the most debated issues in psychology. It looks at the impact that our genetics (nature) and our environment (nurture) have on us. An entire field of study, behaviour genetics, focuses on this issue.

Nature consists of the genes that are passed along to you by your parents the moment you are conceived. **Nurture** is everything that has nothing to do with genes. It includes being exposed to drugs while still in the womb, consuming healthy foods and clean water, breathing second-hand smoke, making life choices, deciding where to live, and identifying with a particular ethnic or religious group.

In this lesson, you will also learn about genetics; how traits are passed from one generation to another, the similarities that exist between twins, the influences the environment has on us, and, finally, what role culture has on who we are.

Genetics

You have your own unique genetic code. It is found in every cell nucleus. It is made up of forty-six **chromosomes**. Of these chromosomes, twenty-three chromosomes come from your mother and twenty-three come from your father. These chromosomes are comprised of molecules called **deoxyribonucleic acid (DNA)**. It is in this DNA that our **genes** are stored.

You have about 20 000 genes in each of your cells. Surprisingly 99.9% of everyone's genes are identical. This is why there is similarity in the appearance and behaviour of people around the world. Our genes are responsible for **predisposing** or influencing our appearance and behaviour, not determining it. **Predispositions** are passed on from one generation to another through the DNA. Being predisposed to something does not necessarily mean that you are going to get it. It means that you have the possibility of developing it. Whether or not the possibility becomes reality depends on your environment.

For example, you may be predisposed to sunburn easily. Whether or not you burn will depend on your exposure to the sun's rays. You might also be predisposed to bipolar disorder. This means that you have the possibility of developing the disorder as a result of environmental factors.

Nature and Similarity

We are all very similar. **Evolutionary psychologists** believe that some of our shared similarities come from genes that have changed to help our ancestors face and conquer problems. People who carried these genes would be more likely to stay in the gene pool and to pass on these genes to the next generation. According to the concept of **natural selection,** the traits that we inherit—those that contribute to survival—are most likely to be passed on to future generations. We all have a bit of our previous generations in us.

Nature and Individual Differences

Our genetic similarity is amazing but so are our differences. **Behaviour geneticists** study differences in humans by looking at twins and people who were adopted.

Twin Studies

Nature has provided us with human lab participants—twins.

- **Identical twins** are genetically the same because they come from the same fertilized egg.
- **Fraternal twins** develop from two different fertilized eggs and aren't any more alike than any other two siblings.

Researchers study the **heritability** of traits. Heritability looks at the differences in our traits or characteristics that are passed on in our genes. A behaviour geneticist might set up a study of identical and fraternal twins to study heritability. The behaviour geneticist would have to perform the following tasks:

- Collect and compare data from identical twins raised in the same home.
- Collect and compare data from fraternal twins raised in the same home.
- Compare the similarities of the identical twins with the similarities of the fraternal twins.

Research has shown that there is a genetic influence on personality traits. This means that identical twins are far more similar in personality than fraternal twins.

Research has also shown that environment plays a key role. Studies on twins that were separated at birth and raised apart from each other have demonstrated that no trait is completely inherited. The behaviours of identical twins are not identical.

Adoption Studies

Another way to look at the nature and nurture issue is to look at adoption studies. Studies have shown that adopted children share more personality trait similarities with their biological parents than with their adoptive parents.

Adoptive parents play a major role in the development of belief systems and in the development of behaviours that make someone a good citizen.

Both twin and adoption studies have shown that both nature and nurture are important in determining who we are.

Environmental Influences

What environmental influences affect development? According to popular psychology, the influences might be parenting without rules, using physical punishment, and being overprotective parents. These claims, however, have not been proven. What has been proven is that early learning experiences, peers, and culture might account for nurture's role in personality development.

Early Brain and Brain Development

For our brains to reach their potential, early experience as children is critical. For example, if you are raised in a home where you don't have the opportunity to learn to read and write, then you will never learn to read and write as an adult.

Our brain tissue continues to change as we get older. Brain pathways that are maintained through practice and experience stay strong. Pathways that are never used fade away. For example, you learned in Grade 10 Geography where all of the major Canadian cities are located on the map. If you don't use this knowledge periodically, the neural pathway that was once created will fade away.

Peer and Parent Influence

In adolescence, peer influence becomes important. Peers are important when it comes to social interaction and popularity. Parents are still important when it comes to education, responsibility, and how to behave in the presence of authority figures.

Cultural Influences

Culture is comprised of the shared attitudes, beliefs, norms, and behaviours of a group. **Norms** are understood rules for accepted and expected behaviour within the group. Culture influences our food selection, religious choices, and family activities. Because of culture, we develop a set of expectations about the kinds of behaviours others should exhibit.

If you give priority to the goals of the group, which can be your extended family or your work group, then you are called a collectivist. Asians and Africans typically raise their children in a collectivist environment where several family members and friends have input.

If you give priority to your own goals over the group's goals, then you are an individualist. Europeans and North Americans typically raise their children as individualists. These children are raised solely by their parents.

No one way is better than the other. In our diverse world, successfully raising children has occurred in both collectivist and individualist cultures.

Lesson Summary

The role of genes and environment on behaviour is the nature and nurture issue.

Behaviour genetics is the field of study that focuses on this issue. From a genetic point of view, we are 99.9% identical to each other, but we also differ from each other.

Twin and adoption studies have provided information on the influence of our genetic makeup and our environment on our behaviour and personality.

Parents and peers play an important role in influencing what we are all about; however, early learning and the culture that we grow up in also play an important role.

Assignment 2.2: Nature versus Nurture (10 marks)

Consider the following scenario and use the concepts in the lesson to provide possible explanations. Provide five points to support the theory of nature and an additional five points to support the theory of nurture that account for the following:

Joanne and Abby are identical twins who were adopted at birth by two different families. Their biological parents were university students. Their biological mother was a business student. She was frequently concerned about the stresses of maintaining her good grades and keeping up with other pressures in her life. Their biological father was a student athlete who attended university on a sports scholarship. In order to keep the scholarship, he worked hard to maintain his grades and his top athletic shape. He came from a family who had very little money and who would not have been able to afford to send him to university otherwise.

Joanne was adopted by a family who lived in a condo in downtown Vancouver, with two working professional parents and no other siblings. She grew up to become a teacher and to have a family of her own. She teaches high school science and mathematics. She is married to an architect and has three children (two boys and one girl). She and her husband still live in Vancouver. Joanne is 5'6" tall and weighs 168 pounds. She has brown hair and brown eyes. She loves reading and doing crafts (for instance, scrapbooking) and is a great amateur photographer. She finds exercise boring and has a hard time maintaining a healthy body weight.

Abby was adopted by a family who lived on a farm in rural Manitoba. Her adoptive mom was a stay-at-home parent and she had three other siblings (two boys, and one other girl). She spent a lot of her childhood helping out with chores around the house and farm, and she loves animals and life in the country. Abby grew up to become a teacher too: she teaches kindergarten. She has one daughter. Abby is very physically fit and exercises regularly. She loves cross-country running and competed competitively well into her university days. She is 5'6" tall and weighs 133 pounds. She has brown hair with platinum blond highlights. She is very creative and enjoys painting as a hobby.

Assignment 2.2: Nature versus Nurture (continued)

Five points to support the theory of **nature**:

1. _____
   _____
   _____

2. _____
   _____
   _____

3. _____
   _____
   _____

4. _____
   _____
   _____

5. _____
   _____
   _____

Five points to support the theory of **nurture**:

1. _____
   _____
   _____

2. _____
   _____
   _____

3. _____
   _____
   _____

4. _____
   _____
   _____

5. _____
   _____

L ESSON 4: S ENSATION

Lesson Introduction

Without sensation and perception, you would not have any contact with the world. You would be without sight, sound, smell, touch, and movement. The process by which our sensory organs, such as our eyes, ears, nose, and nervous system, receive information from the environment is called **sensation**.

You are constantly using your senses. The following are a few examples:

■ You walk by a perfume counter at the mall.
■ You are overwhelmed by the smell of a rotten sandwich in your locker.
■ Your music is so loud that you can't think.
■ You taste nasty cough syrup.
■ You see the ugliest outfit you have ever seen from the 1970s.
■ You ride a roller coaster.

The nervous system processes sensory information in two ways. When the nervous system sorts through all the sensory information, it is called **bottom-up processing**. This means that the nervous system processes all the raw data that our sensory organs bring in. The other type of processing is called **top-down processing**. The focus in this type of processing is on how our expectations and experiences influence our interpretation of the incoming stimuli.

In this lesson, you will learn about the basic concepts of sensation and you will explore the capabilities and limitations of the sensory systems.

Thresholds

By definition, a **threshold** is an edge or a boundary. The threshold that psychologists are interested in is called the **absolute threshold**. This is the minimum amount of stimulus that a person can detect. Nevertheless, not everyone has the same absolute threshold. Researchers have defined absolute threshold as the point at which a very weak stimulus could be detected fifty percent of the time.

For example, we can see a candle flame on a clear, dark night fifty kilometres away; we can feel the wing of a bee falling on our cheek; and we can smell a drop of perfume in a three-room apartment.

Anything below the absolute threshold is called a **subliminal threshold**. For example, humans can't hear a dog whistle. This would be at the subliminal threshold. There are claims that the media uses this concept in providing subliminal messages in their advertising. This is called subliminal persuasion.

For example, there are claims that the word "sex" has appeared in the ice cubes of advertisements for alcohol; that rock music recordings have satanic messages; and that weight loss tapes have messages in them that you can't hear. Do these messages have any impact on behaviour? The research says no.

Another type of threshold is called the **difference threshold**. This is sometimes referred to as the **just noticeable difference (jnd)**. This difference threshold is the smallest change in a stimulus which a person can detect 50% of the time. You can determine this by changing the stimulus in varying amounts to see when a person will notice the change. The difference threshold is not a constant amount, but it is a constant proportion of the stimulus. This is known as **Weber's Law**. Let's look at some examples.

If you put a quarter in a running shoe, will you notice the change in weight? It is possible. Conversely, if you put a quarter in a pair of work boots with steel toes, will you notice the change in weight? It is highly unlikely. Studies have shown that two lights must differ in intensity by 8%, two objects must differ in weight by 2%, and two tones by only 0.3%.

In order to determine a weak stimulus or signal, not only is the strength of the stimulus or signal important, but our experience, expectations, motivations, and alertness are also important.

Signal Detection Theory

Signal detection theory predicts how and when stimuli can be detected. It relies on thresholds which are important in determining which signals can be noticed or sensed. Researchers have found that important life and death situations rely upon thresholds.

Such examples are whether or not a tumour is detected in an X-ray and whether or not explosives can be detected in a person's luggage at the airport.

Signal detection theory is a set of formulas and principles to predict when we will detect a stimulus.

- When you detect a stimulus and it really is present, this is called a hit.
- When you don't detect a stimulus and there really isn't one there, this is also called a hit.
- When you detect a stimulus and there isn't really one there, this is called a false alarm.
- When you don't detect a stimulus and there really was one there, this is called a miss.

Signal detection theory is used to detect tumours and to improve air traffic control. Let's look at the example of tumour detection.

- A hit would occur if there was a tumour and it was detected, and if there was no tumour and it wasn't detected.
- A false alarm would occur if there was no tumour, but the physician said there was one detected.
- A miss would occur if the physician didn't detect the tumour that really was there.

Learning Activity 2.4: Thresholds

For each of the following situations determine which of the following concepts is necessary to complete the task successfully.

The concepts are: absolute threshold, just noticeable difference, and subliminal threshold.

1. You are learning a new language and you listen to a "Learn While you Sleep" compact disc. _____

2. You are walking home from a party and you hear footsteps behind you. _____

3. You hear your name called and, without looking, you know who is calling you. _____

4. You go to the store for your mom to buy potatoes that are on sale. You want the most for your money. _____

5. You look for your contact lens that has fallen on the white floor. _____

6. A music group records "Buy our CD" backwards in one of their songs. _____

7. You try to find your cellphone in your room during a power failure. _____

8. You have been asked to judge the different chilies that the students taking the Foods and Nutrition course have made and pick out the best one. _____

9. While judging the different chilies, you have to find the one that contains cinnamon. _____

Check the answer key.

Sensory Adaptation

All living organisms pay attention to the changes in the environment around them. We tend to pay more attention when things change and eventually ignore things that stay the same. This is called **sensory adaptation**. It is a decreased sensitivity to a stimulus that is constant.

For example, when you first walk into a room you notice a strong smell; however, after a few minutes, you don't notice it anymore. Another example is that you first hear the refrigerator running after a power outage, but shortly thereafter you don't hear it anymore.

Selective Attention

Selective attention lets you focus on one stimulus at a time. This is what allows you to function in our noisy, busy world without being bombarded with tons of information from the environment.

At this very moment, you are probably not noticing how your clothes feel on your body, how your socks and shoes feel on your feet, the temperature in the room you are in, and the sounds in the room. However, after reading this sentence, you are now most likely thinking about it. This is called selective attention. If you use a cellphone while driving, your attention shifts from the road to the phone and back again. Research has shown that this can slow people's response time to traffic signals, billboards, and other cars.

Another example of selective attention is the **cocktail party effect**. This is our ability to pay attention to only one voice among many.

Visual System

Nature of Light

Light is a form of electromagnetic energy. It is the same type of energy as television waves and radio waves. There are different types of waves ranging from short gamma rays to long radio waves. Humans can only detect a small portion of these waves. This is called the **visible spectrum**. The visible spectrum contains all the colours of the rainbow from red to violet. The colours of the rainbow can be memorized in order by remembering the name Roy G. Biv. The letters in his name stand for red, orange, yellow, green, blue, indigo, and violet. The colours of the spectrum are called **hues**. Each colour represents a different hue. There are two characteristics to light waves. They are **wavelength** and **amplitude** or height.

- A short wavelength has bluish colors.
- A long wavelength has reddish colors.
- A great amplitude has bright colors.
- A small amplitude has dull colors.

| Figure 2.17 | **Electromagnetic Spectrum** |
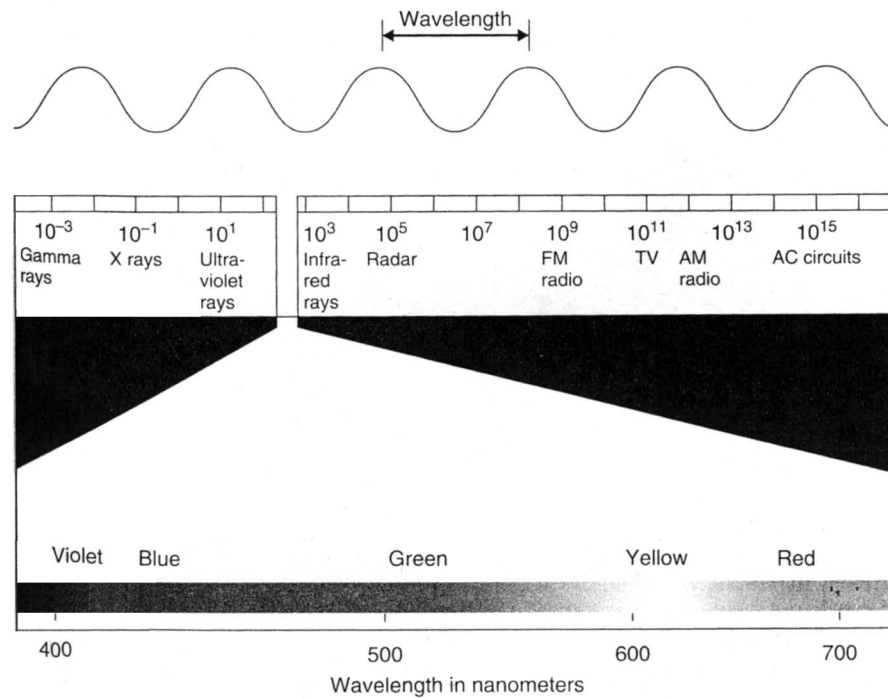
The Structure of the Visual System

The visual system is the most studied of all of the sensory systems. This is because humans are dependent on vision and have a larger portion of their brain devoted to it than to any other sense.

Figure 2.17: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 231.

Figure 2.18   **Visual System**
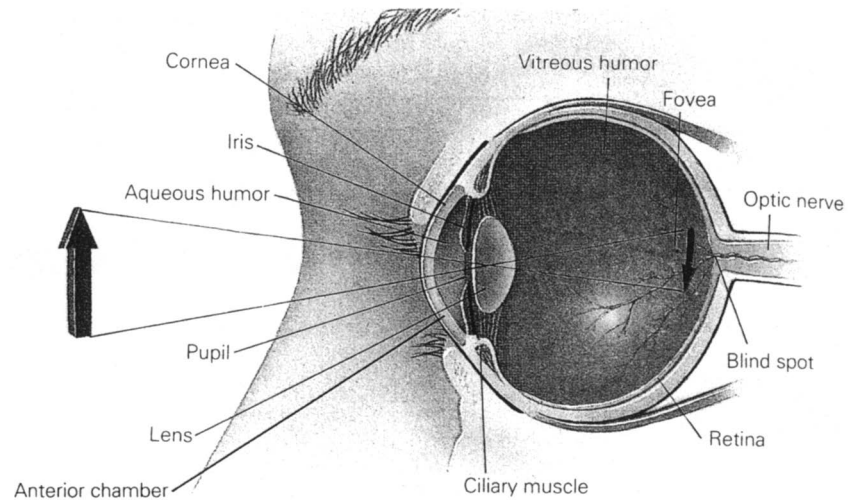
The sense organ for sight is the **eyeball**. It gathers light into a focused image on the back of the eye. Focusing is done by refracting or bending light as it passes through the tissue and fluid of the eyeball. The back of the eye gets an inverted or upside down image.

The front layer of the eye is called the **cornea**. It is a tough, clear covering that is very painful when accidentally scratched. It refracts light so it is the first stage in the process of focusing the visual image.

Behind the cornea is fluid that also refracts light. The fluid is in a structure called the **iris**. This is the coloured part of your eye. The colour is determined by the amount of pigment that you have.

This iris has a set of muscles that allow it to change the size of the hole in the middle of it. This is called the **pupil**. If you are in a brightly lit room your pupil will shrink or constrict. If you are in a dimly lit room, your pupil will enlarge or dilate. The muscles in the iris are controlled by the brainstem. This means that this is a reflex that can only happen if the brainstem is alive. If a person's pupil is fixed and dilated, wide open, and unresponsive to light, then that person is dead.

Right behind the iris is the **lens**. Its primary role is to focus the visual image on the back of the eye. The lens can change shape. Nearsightedness and far-sightedness are common problems of vision when the image from the environment is not focused correctly on the back of the eye.

- If you are **nearsighted**, the lens causes light rays from distant objects to come together in front of the retina which blurs the image.
- If you are **far-sighted**, the lens causes light rays from close objects to come together behind the retina which blurs the image.

The back of the eye is called the **retina**. It is made up of many layers of nerve cells. The nerve cells become **photoreceptor cells**. These are the rods and cones.

- **Rods** detect only black, white, and gray.
- **Cones** detect sharp detail and colour.

In dim light, only the rods respond. This is why you see everything in shades of gray. The majority of cones are found in the centre of the retina. This spot is called the **fovea**. This is where your vision is the best. You have a lot more rods than you do cones.

The rods and cones feed their information into **bipolar cells** that pass on the information to **ganglion cells**. This is the last layer of the retina. The axons of the ganglion cells form the **optic nerve** which carries information to the **occipital lobes** of the brain. The area where the optic nerve exits the brain is the **blind spot**. There are no rods or cones in this area.

| Figure 2.19 | **Retinal Pathways** |
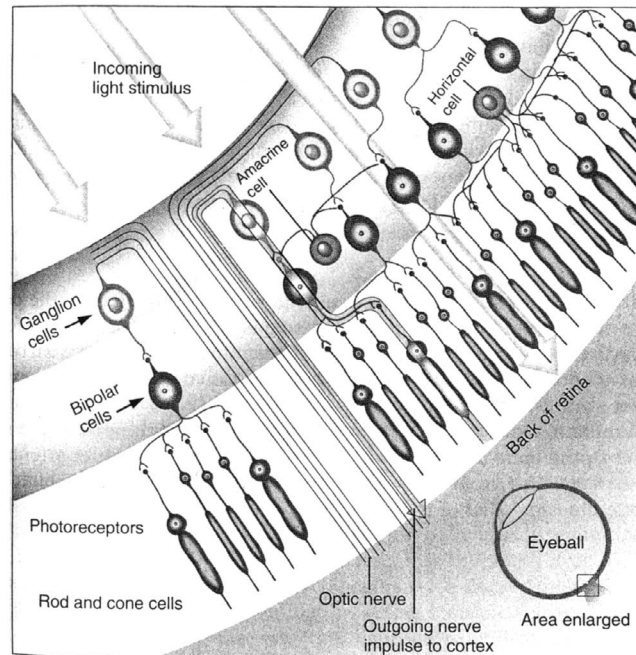
Colour Vision

Our visual system is very good at detecting small changes in colour. You already know that colour is a function of the cones. There are two theories of colour vision.

Trichromatic Theory

The research of Helmholtz and Young found that cones are sensitive to three different wavelengths: red, green, and blue. They called their theory the **trichromatic (three colour) theory of colour vision**. If you stimulate the cones in different degrees you will get all the colours that a person can detect.

You may have learned in Art class that the primary colours are red, yellow, and blue; not red, green, and blue. This is because painting produces colour using a **subtractive process**. Paint pigment subtracts or absorbs different wavelengths of light. Yellow paint absorbs all wavelengths except yellow which is reflected back to the eye.

Vision works on the **additive process**. Each wavelength adds a new colour. If you mix red, green, and blue lights, then you get white, not black.

Colour-blind people are missing one of the three types of cones. It is usually either the red or green receptors. This condition is inherited and is more commonly found in males.

Opponent Process Theory

The opponent process theory of colour vision was developed by Hering. He believed that colour is processed in opponent pairs.

The pairs are red-green, yellow-blue, and black-white.

Light stimulates one half of the pair and inhibits the other half. This is why we see colour **afterimages**. If you stare at something red for a period of time and then look at a white paper, you will see the image in green. The same works for all the pairs. You cannot see red and green in the same spot at a given time.

There are two theories of colour vision but which one is correct? The truth is that they are both correct.

Hearing

Nature of Sound

Just as light enters the eye as waves of electromagnetic energy, sound comes in waves too. The difference is that sound is vibration. You can feel your vocal chords vibrate when you speak.

For sound, the length of the wave determines the pitch of the sound. This is measured in hertz. The height, or amplitude, of the wave determines loudness and is measured in decibels. The absolute threshold for hearing is 0 decibels.

Prolonged exposure to sounds that are over 85 decibels will produce gradual, irreversible hearing loss. To give you an idea of the possible damage resulting from listening to loud music, a jet plane, at 160 metres, produces 110 decibels. The music at a rock concert is at 140 decibels. In other words, turn down the volume because the damage can't be fixed.

In general, any noise that you can't talk over may be harmful, especially if you are exposed to it often and for a long time. If your ears ring after exposure to loud music or machinery, it is a sign that possible hearing damage may be occurring. You should think about this the next time you put your earbuds in and listen to your music at full volume.

Structure of the Auditory System

Sound is initially collected in the outer ear. This area is also called the **pinna**. It is shaped like a funnel to help it collect sound.

Sound enters the outer ear and travels down the **auditory canal** to the **eardrum**. This is also called the **tympanic membrane**.

On the other side of the membrane is the **middle ear**. In the middle ear are three bones: the **hammer**, the **anvil**, and the **stirrup**. These bones increase the force of the vibrations. They act like an amplifying system.

The pressure in this area of the ear must be the same as the pressure outside. In order for this to happen, a tube—called the **Eustachian tube**—runs from the middle ear to the back of the throat. Every time you swallow, the tube opens. If you blow too hard while blowing up a balloon, the pressure sometimes goes up into your Eustachian tube and causes pain in your middle ear. You can equalize the pressure yourself by chewing gum or yawning. When the tube opens you hear a popping sound.

Just beyond the middle ear is the **inner ear**. The boundary is called the **oval window**. The inner ear is filled with fluid. The main organ of the inner ear is the **cochlea**. The function of the cochlea is to turn sound wave vibrations into neural impulses. This is done by thousands of hair cells in the cochlea.

The neural impulses are collected by fibres that join to form the **auditory nerve**. This nerve exits the cochlea and travels to the **temporal lobes** of the brain where auditory processing occurs.

Figure 2.20	**Auditory System**
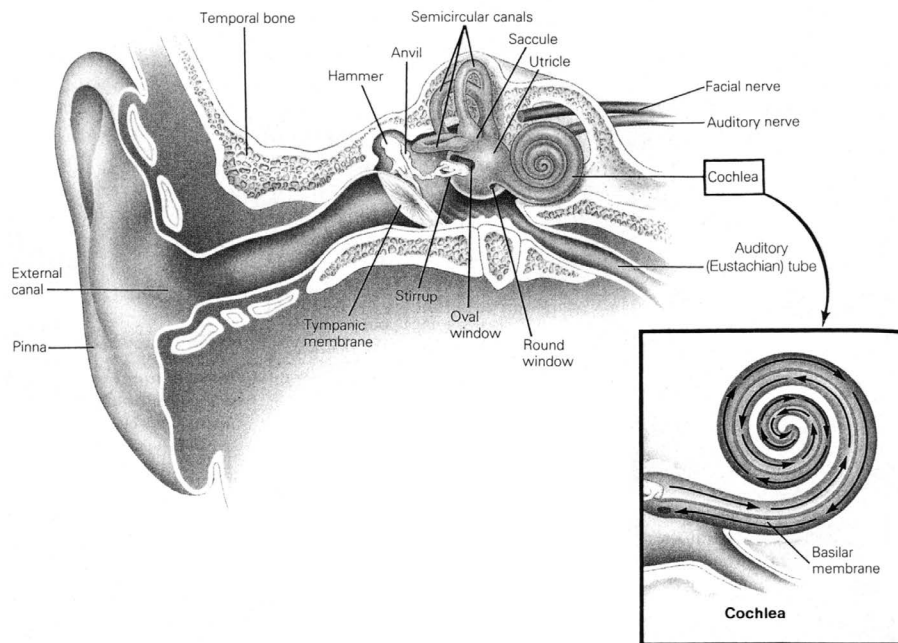
Sound Localization

We have the ability to know where sounds are coming from—left, right, front, or back. This is called **sound localization**. When a sound originates from your right, it reaches your right ear slightly faster and slightly louder than in your left ear. Your brain calculates the difference and helps you locate the sound. It is sometimes difficult to distinguish sounds that come from in front of you and behind you because the sound reaches both ears at the same time.

Other Senses

Smell

Smell or **olfaction** is odour detection. The olfactory receptors are located in the **nasal cavity**. The receptors that are found there feed directly into a part of the brain called the **olfactory bulb**. In order to trap small amounts of airborne particles on the membranes of the olfactory receptors, we send a small amount of air upward into the nose when we take a breath.

When we sniff, we increase the amount of air going into the sinuses by disturbing the air stream. This is why we automatically sniff the air when we want to smell something.

The sense of smell is sensitive. Humans can detect small amounts of odour-producing substances. We can do this because there are about five to ten million receptors in each nostril. Dogs are even better than humans at detecting odours. According to estimates, they are about a million times better than humans. This would mean that they have about two hundred million receptors.

In order for a substance to be detected by smell, it must be **volatile**. This means that it must be capable of evaporating. Gas is volatile and so is the oil from an onion. It must also be **fat soluble**. Only molecules that can be dissolved in fat can have an odour.

Olfactory adaptation occurs rapidly and completely because of a special chemical system that neutralizes the response of olfactory receptors to odours. After only a few minutes, 80% of odours cannot be detected.

The olfactory sense plays a major role in our perception of flavour in food. When one's nose gets stuffed up, food is tasteless. If you hold your nose and eat something, you won't know what it is.

Some psychologists believe that odours can alter mood. This is the thinking behind **aroma therapy**.

Figure 2.21	*Sense of Smell*

(A) View of skull

(B) Enlarged aspect of olfactory receptors

Taste

Taste or **gustation** is our ability to taste foods and liquids even though olfaction dominates our ability to taste. Taste cells are gathered together in **taste buds** on the tongue. They are hidden in bumps on the tongue called **papillae**. The taste buds are hidden in the pores of the papillae. There are about ten thousand taste buds on the tongue. Each taste bud has from ten to twenty taste cells (gustatory cells) that look like the sections of an orange. These taste cells are the actual receptors for taste. They are constantly rebuilt and replaced. About every seven days, you get a new set of taste cells. This is what happens if you burn your tongue on a hot drink.

Substances enter the taste buds through small pores on the papillae. For this to happen, the substance must dissolve in water so it can wash through the pores. Only substances that can be dissolved in water (saliva) can be tasted.

Taste cells are called **chemoreceptors**. They respond to chemical substances. The four classic taste qualities are sour, salty, sweet, and bitter. There is a fifth taste called **umami**. This is the taste caused by a receptor for the neurotransmitter glutamate. Umami is a taste characteristic of high-protein foods and animals seek it out. The food additive monosodium glutamate (MSG) enhances this taste.

Figure 2.22	**Sense of Taste**

A. Top view of tongue   B. Enlarged side view of papilla   C. Enlarged view of taste bud

Gustatory cell

Taste bud

Papilla

Touch

The sense of touch is our physical connection with the outside world. It involves different types of receptors. Your skin is embedded with receptors that respond to various kinds of stimulation.

Figure 2.22: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 249.

The basic skin senses are pain, warmth, cold, and pressure. Your experience of other skin sensations comes from various combinations of these four basic skin senses.

For example, itches result from gentle stimulation of pain receptors, hot is from the simultaneous stimulation of warm and cold, and wetness is from simultaneous stimulation of cold and pressure.

The sense of pain is very complicated. According to the **gate control theory** of pain, pain messages from the body travel on one set of nerve fibres in the spinal cord, and other kinds of sensory information travels on another set of fibres. The fibres carrying pain messages contain pain gates. The gates are open when we experience pain. Under some circumstances, the non-pain fibres can actually close the pain gates. This can happen when you rub or ice the area that hurts.

The incoming pain messages involve bottom-up processing. Pain also involves top-down processing. Your brain has a significant influence on how you perceive pain. Your level of focus can sometimes block the pain messages from conscious awareness.

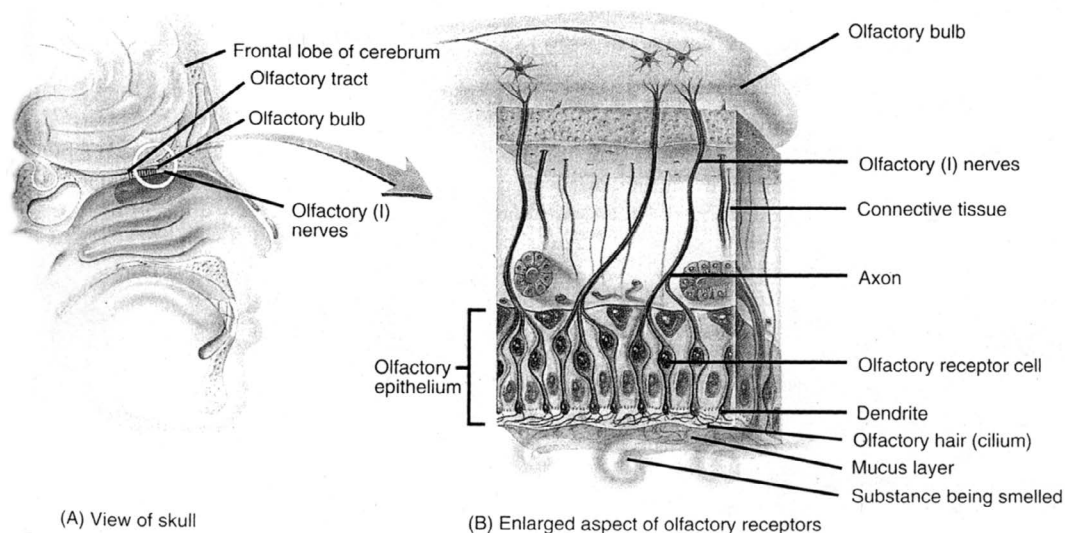| Figure 2.23 | *Sense of Touch* |

Section of skin and subcutaneous layer
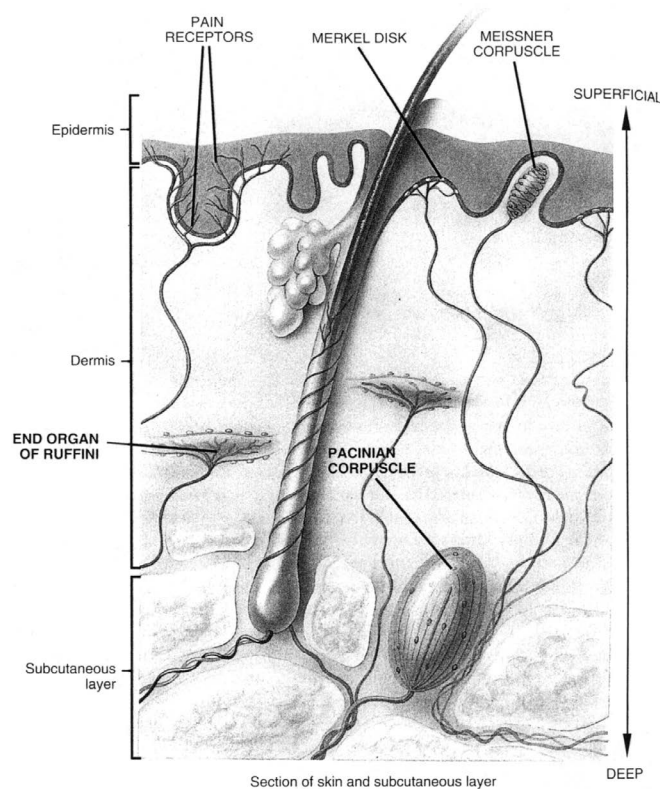
Figure 2.23: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 250.
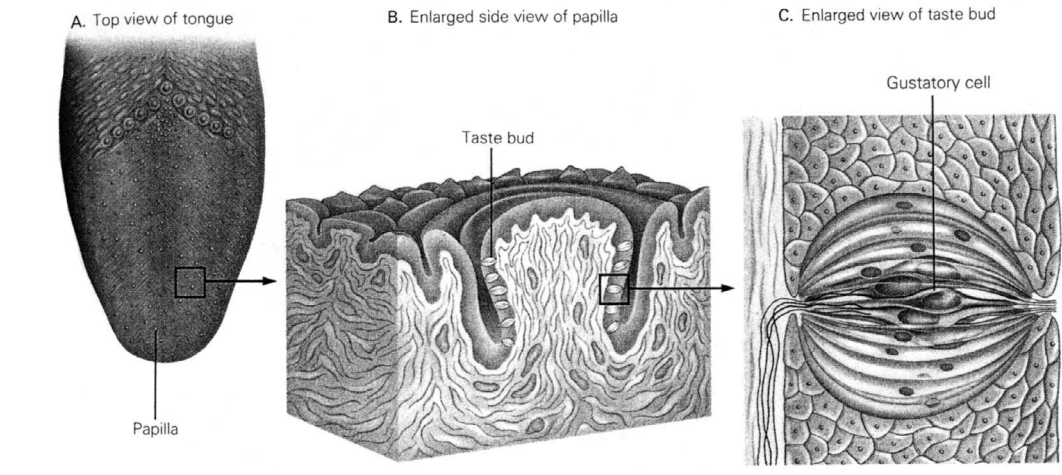
Body Senses

There are two types of body senses. They are **kinesthesis** and the **vestibular** sense.

Kinesthesis

Kinesthetic receptors detect change in body position. This is because there are receptor cells located in your muscles and joints. These cells monitor the position and movement of muscles, bones, and joints. This is how you can tell, even with your eyes closed, where your hand is located.

Sometimes, this sense is disrupted. A perfect example is when your leg "falls asleep". This happens when you've held your leg in the same position for so long that the nerve temporarily stops transmitting kinesthetic information. It is almost impossible to walk smoothly until the link is re-established.

Vestibular Sense

A second body sense is your **vestibular sense**. This system senses balance. The sense organs are located near the inner ear. When a person suffers inner ear damage, their sense of balance is often affected. The semicircular canals that are on top of the cochlea are fluid-filled.

Motion sickness is caused when signals from the vestibular sense do not mesh with signals from the sense of vision. For example, when you are in a moving car, the sense of sight indicates motion, but the kinesthetic sense tells the brain that the body is sitting still. This disagreement causes motion sickness. The same principle applies to sea sickness. One cure is to fixate your gaze on the horizon. To experience this sense right now spin round and round in circles. Your vestibular sense is now fully activated.

Lesson Summary

Your senses are your window to the world. They are the sources of raw information that you need to guide your thoughts and behaviours. The process by which our sensory system picks up this information is called sensation. In this lesson, the concepts of absolute threshold, difference thresholds, signal detection theory, sensory adaptation, and selective attention were addressed.

All the major and minor senses were then discussed.

The circular shape of the eyeball is best for gathering light into a focused image. The first few structures of the eye (cornea, lens, and fluid-filled chambers) are responsible for refracting light. This helps bring light to a focus on the retina which is at the back of the eye. Nearsightedness occurs when the focal point is in front of the retina and far-sightedness occurs when the focal point is in back of the retina. Rods (black and white receptors) and cones (colour receptors) are found at the back of the retina. Two theories of colour vision, the trichromatic theory and the opponent process theory, both explain our ability to see colour.

The ear responds to pressure waves in the air gathered by the outer ear and directed down the auditory canal to the eardrum. Movements of the eardrum are amplified by three tiny bones in the middle ear. The energy is converted in the inner ear, in the cochlea. The brain can determine where sound is coming from.

The minor senses are only minor in the sense that they are less studied and have less of the brain devoted to them than vision and audition.

Olfaction is specialized in detecting the molecular shapes of molecules.

Gustation is due to the activity of taste cells gathered in the taste buds of the tongue.

Our sense of touch includes sensitivity to pressure, pain, and temperature. Pain is influenced greatly by psychological factors such as awareness or injury.

The kinesthetic sense is the sense of body position. It helps a person know the position of body parts.

The vestibular sense is the sense of balance.

Assignment 2.3: Senses: Windows to the World (15 marks)

Using the chart below, list **three** positive and **three** negative consequences of turning off the corresponding sense. *(1.5 marks for positive consequences and 1.5 marks for negative consequences for each sense)*

Sense	Energy	Positive Consequences	Negative Consequences
Vision	Light		
Hearing	Air Pressure Waves		

Sense	Energy	Positive Consequences	Negative Consequences
Touch	Pressure/Pain Temperature		
Taste	Chemicals		
Smell	Chemicals		

Lesson 5: Perception

Lesson Introduction

This lesson focuses on **perception**. This is our interpretation of the stimuli coming in from the world around us. It is the process by which we work to make sense of what can be a confusing collection of sensations. We are able to select, organize, and interpret important sensations, and turn the world into a meaningful place.

The information is processed by **bottom-up processing**, which focuses on the raw material that enters through our sensory systems, and by **top-down processing**, which focuses on how our expectations and experiences influence our interpretation of incoming stimuli.

Concepts such as figure—ground, depth perception, motion perception, and perceptual constancy will be covered.

The lesson will end with a discussion of extrasensory perception (ESP) and illusions.

Organizational Principles

In the late 19th century, Gestalt psychologists believed that if you broke experiences down into basic parts, then something was lost. This was, as you'll remember from the first module, in opposition to the thinking of the work of Wundt.

- Wundt's approach was to break down conscious experience into its most basic parts.
- A group of German psychologists noticed that people tend to organize things into something meaningful. This organized whole is called a **gestalt**.
- **Gestalt psychologists** believed that the whole (what we tend to perceive) is greater than the sum of its parts. They believed that instead of focusing on individual stimuli in our environment, we group them into more meaningful units.

Figure–Ground Relationships

Gestalt psychologists believed that we naturally organize our environment into **figure–ground relationships**.

When a gestalt is formed or perceived it becomes a **figure** (a thing or an object). A figure is always backed up by a surrounding **ground**; however, a pattern can't be seen as a figure and a ground at the same time.

The pattern never changes; it is just your perception of it that changes. Most of the time, the figure can be distinguished quite clearly from the ground. For example, when you look up at the sky, the airplane that you see is the figure and the sky is the ground. Sometimes, the figure and the ground keep changing.

Figure 2.24	**Figure-Ground Relationships**

Vase or faces?   The Necker cube: above or below?   Duck or rabbit?
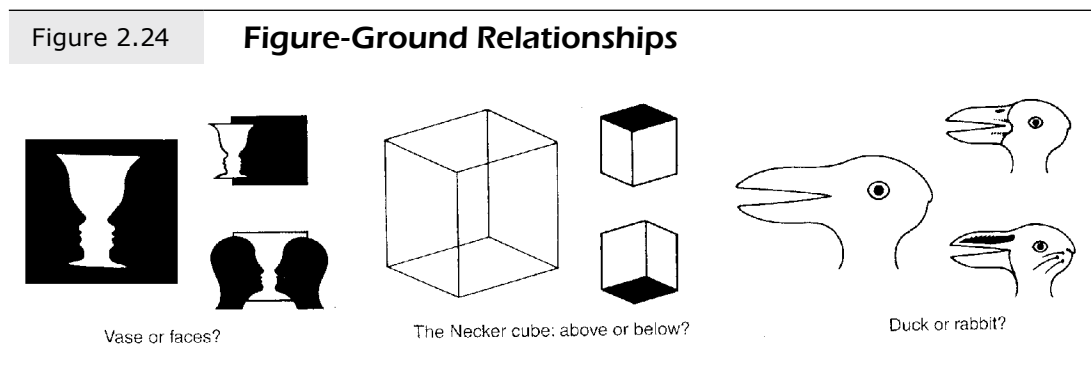
Grouping Principles

Gestalt psychologists also believed that people organize stimuli by **grouping**. An important Gestalt psychologist by the name of Kohler described **Laws of Pragnanz**. These laws help to clarify why we place items into understandable sets and are also known as **Gestalt principles**. They are as follows:

- **Similarity:** We tend to place items that look similar in the same group.

- **Proximity:** If objects are close together, we tend to put them in the same group.

Figure 2.24: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 263.

Similarity and Proximity

A. Standard

B. Proximity

C. Proximity

D. Similarity

E. Similarity

F. Similarity

G. Common fate
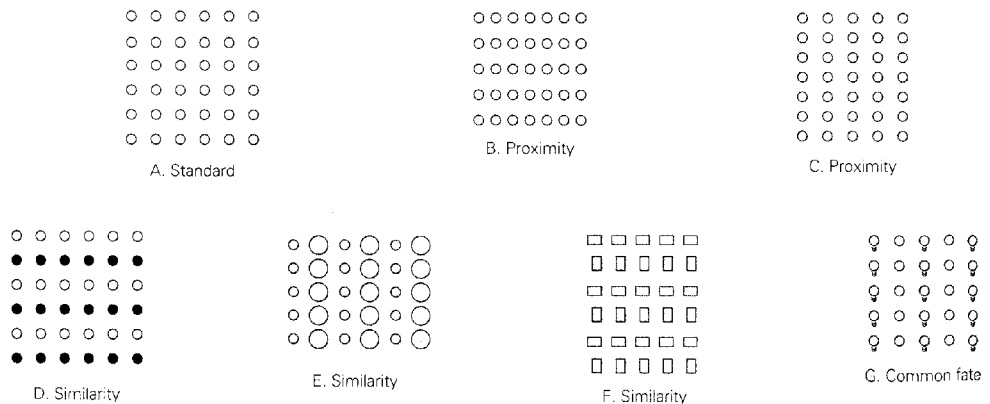
- **Closure:** Our brain has a tendency to fill in gaps or holes. It does this automatically. Without this ability, we would not be able to recognize objects seen through the bushes or when they are partially blocked from our view. Because of this ability, humans are good at creating a gestalt out of the mere suggestion of an object.

Figure 2.26

Closure
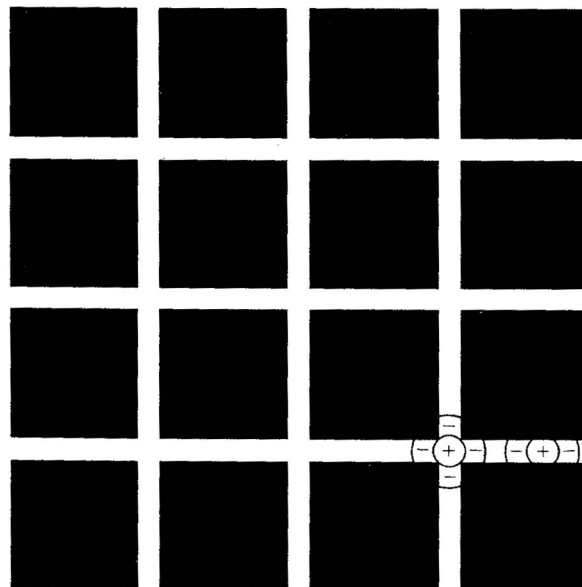
Figure 2.25: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 282.

Figure 2.26: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 265.

- **Continuity:** When an object appears to move in a particular direction, your brain assumes that it will continue unchanged. An example of this is when you are driving on a highway and you miss road signs.

Let's look at how Gestalt principles can be applied to watching a professional football game.

Principle	Application to a professional football game
Figure–ground	The players in the immediate vicinity of the ball will be the figure against the ground of the rest of the team. As the football is passed, your attention shifts to a different player—the figure—and the rest of the action will be the ground.
Proximity	Teams begin each play close to each other (one team per side).
Similarity	Uniforms are a symbol of similarity identifying who is on which team.
Closure	Each play represents closure because once the ball is caught, the spectators anticipate how the play will end.
Continuity/ Connectedness	A well-executed play illustrates the principle of continuity. Each member of the team contributes to the overall pattern that makes a play successful. When plays are unsuccessful, the group members appear to be disconnected from one another. Signals are missed and errors are made. The team doesn't appear to be functioning as a connected whole.

Assignment 2.4: Applying Gestalt's Principles (5 marks)

Complete the following chart by providing examples of how the Gestalt principles can apply to watching a group of dancers or cheerleaders perform.

Principle	Application to watching a dance group perform
Figure–ground	
Proximity	
Similarity	
Closure	
Continuity/ Connectedness	

Depth Perception

Besides the organizational principles of figure–ground and grouping, we also have the ability to organize two-dimensional images into three-dimensional perceptions.

When we look directly at an object, the image falls mostly on the fovea. Remember that this is a tiny portion of the retina. The brain must process the three-dimensional reality of our world from an image that is focused on the two-dimensional surface of the retina. This process occurs unconsciously by relying on **depth cues**. These cues allow the brain to figure out the distance of objects.

Without depth perception you would be unable to determine distances. In other words, you couldn't drive, catch a ball, or put away your clothes in the closet. Before we look at the different types of depth cues, think about whether depth perception is learned or is something you are born with. In other words, is it nature or nurture?

A classic experiment by Gibson and Walk explored this question using a device called the **visual cliff**. The visual cliff was used to test depth perception in infants and young animals.

It consisted of a clear thermoplastic table over a red and white checkerboard design that made it appear as though the table dropped off. In the experiment, the researchers wanted to determine whether an infant perceives depth. They found that infants that can barely crawl are reluctant to move past the edge of what appears to be a drop-off. This proves that depth perception, to some extent, is inborn or part of the nature side of the issue. They found the same results with other animals.

Figure 2.27	***The Visual Cliff***

Research also supports the nurture side of the issue. Infants that can crawl have had experience with their environment. Their reluctance to crawl over the drop-off edge may be learned. Once again there is support for both nature and nurture.

Let's get back to the retina; the two-dimensional surface that we use to determine height, width, and depth. Your brain uses a number of tricks to create that third dimension in order for you to perceive depth. Some of the cues are **monocular cues** (they require only one eye) while some are **binocular cues** (they rely on both eyes). Let's look at the binocular cues first.

Binocular Depth Cues

There are two binocular cues that we use to perceive depth.

Retinal Disparity

The first of the two binocular depth cues is called **retinal disparity**. This is the difference between the images that you see with the retinas in your left and right eyes.

A close object produces a greater difference in the images than a distant one. Cover one eye and then cover the other eye. Nearby objects will appear to jump as you switch from one eye to the other. This shows that different images are reaching each eye. More distant objects will not appear to change position as much.

In the 1800s, a popular amusement toy was the stereoscope. A stereoscope holds a card that contains two images; one visible to each eye. Because the two images are photographed from slightly different angles, retinal disparity occurs and a three-dimensional image results.

Figure 2.28   **Stereoscope**
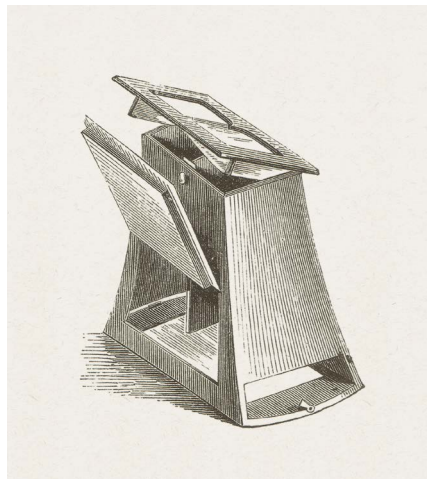
The same principle applies to devices (for example, a View-Master) that are used to view stereo images (three-dimensional images). With such devices, the image taken by the left camera is projected to your left eye and the image taken by the right camera is projected to your right eye. Your brain uses the different views to calculate distance and add depth to the scene.

Figure 2.29	**View-Master**

Convergence

The second binocular cue is **convergence**. With convergence, the tension in the muscles in the eye changes in order to focus on objects close to the person looking at them. To stay focused on an object as it moves closer to you, your eyes would have to swing inward. This puts tension on the muscles that control your eyeballs and your brain notices that tension.

Convergence and retinal disparity both predict depth best at short distances. Depth perception at longer distances relies mostly on the monocular cues.

Monocular Depth Cues

If you lose vision in one of your eyes, you are unable to use retinal disparity or convergence as depth cues. You can, however, still calculate depth. You use **monocular depth cues** instead. These operate with only one eye.

Artists use these cues to trick our two-dimensional retinas into seeing three-dimensional images. There are seven monocular depth cues.

Relative Size

If an object of known size appears large, it is probably close and if it appears small, it is probably distant.

| Figure 2.30 | **Relative Size** |

Relative Motion

This is a cue to distance. Faraway objects appear to hold still while nearby objects go by quickly. This is also called motion parallax.

Interposition

In this depth cue, we assume an object that cuts in front of another object is closer to us.

| Figure 2.31 | **Interposition** |

Relative Height

Distant objects appear higher in your field of vision than close objects.

| Figure 2.32 | **Relative Height** |

Texture Gradient

Distant objects usually have a much smoother texture than nearby objects.

| Figure 2.33 | **Texture Gradient** |

Relative Clarity

Distant objects are less clear than nearby objects. This depth cue functions best outdoors where distant objects have a bluish, hazy appearance because of the moisture and dust in the air.

| Figure 2.34 | **Relative Clarity** |

Linear Perspective

This is the tendency of parallel lines to converge in the distance. It creates an impression of depth that influences our interpretation of other parts of a picture.

Figure 2.35	**Linear Perspective**

Combined, the seven monocular cues and the two binocular cues allow us to judge depth.

Motion Perception

Just as important as our ability to judge depth is our ability to judge motion. In order to do this, not only does the object have to move, but so does your body. If you move your head from side to side, you will notice a lot of motion. You correctly know that this is head movement not object movement.

Sometimes our conclusions are wrong. We perceive motion when there isn't any motion. There are two effects of this illusion. They are **stroboscopic motion** and the **phi phenomenon**.

Stroboscopic Motion

A perfect example of **stroboscopic motion** is when you go to the movie theatre. You see motion from rapidly projected still frames.

Phi Phenomenon

In the **phi phenomenon**, an illusion of movement occurs when fixed lights are turned on and off in sequence. You can see this effect on marquee signs, scoreboards, and at highway construction sites. The action seems so real that you forget that you are really looking at lights blinking on and off.

Perceptual Constancy

We have the amazing understanding that things will remain constant even though there are changes in the distance, angle of view, or lighting level of an object. This is called **perceptual constancy** and there are three major kinds: size, shape, and lightness.

Size Constancy

Size constancy is the tendency of objects to keep the same apparent size even as they approach us or move farther away. This is why we don't think a car is shrinking when it drives away from us. Even though the retinal image is shrinking, we know it is going farther away. We make this calculation automatically. Moviemakers use this concept when they surround a model of something that is extremely large in reality with a featureless background. This gives you no definite information about the distance of the object. There are no depth cues; hence, the models are interpreted as large objects. Imagine how scary the world would be without this ability. As something or someone got closer to you, you would have to wonder if they were growing in size.

Shape Constancy

Shape constancy assures us that an object's shape has not changed even though our angle of view may indicate that it has done so. We automatically correct for changing angles.

Lightness Constancy

Lightness constancy gives us the ability to see an object as having a constant level of lightness or darkness, no matter how the lighting conditions change. Once again, we do this automatically.

Perceptual Set

What determines how we are going to perceive something? Our expectations through our experiences will determine our perceptions. These expectations produce a **perceptual set**. This is our mindset, or our mental tendencies and assumptions, which affects what our world looks like. Our perceptual set can influence what we hear, feel, taste, and see.

Our perceptual set is often guided by **schemas**. These are concepts or mental frameworks that help us to organize our world. Think of perceptual set as a pair of glasses—they change the way you see the world.

Context

The setting or environment in which we interpret sensory stimuli affects what we perceive. This is called the **context**. It causes us to interpret stimuli differently, depending on where we are and what we have recently experienced.

Illusions

Illusions trick us into misinterpreting sensory stimuli. Psychologists study them because they provide clues about how our sensory and perceptual systems work. The following are some of the more famous illusions. You can search for more illusions on the Internet.

Muller-Lyer Illusion

Which line segment is longer? Why did your eyes deceive you?

Figure 2.36	**Muller-Lyer Illusion**
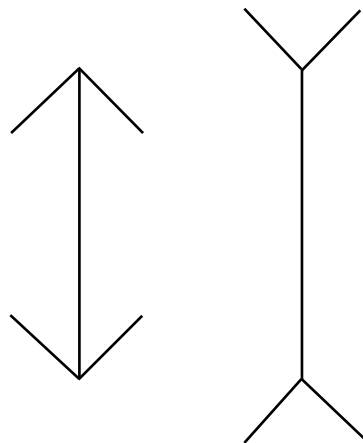
Ames Room

Why do the people seem to change size when they change location in the room?

| Figure 2.37 | ***Ames Room*** |
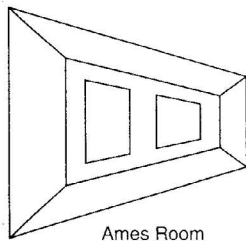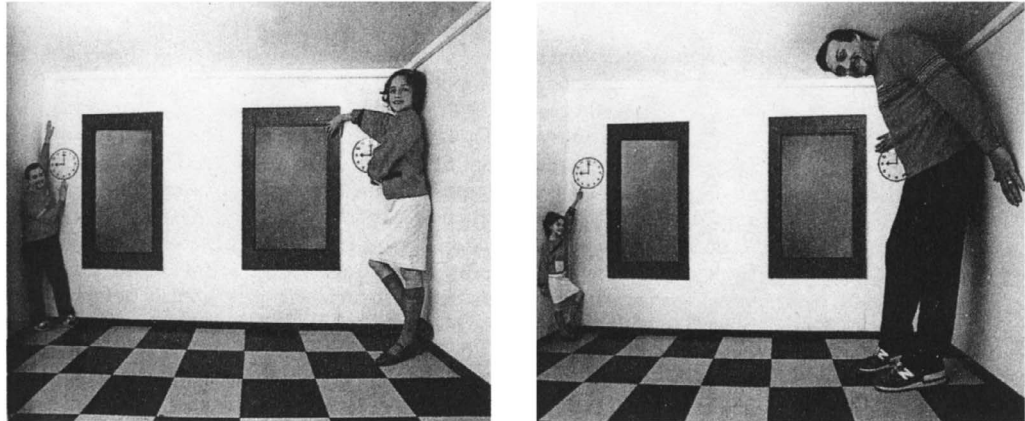
Ames Room
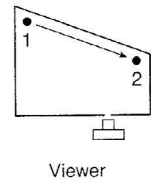
Viewer

St. Louis Gateway Arch

Is it taller than it is wide or wider than it is tall?

| Figure 2.38 | ***St. Louis Gateway Arch*** |

Old/Young Woman

Which do you see? An old woman? A young woman?

Figure 2.39	**Old/Young Woman**
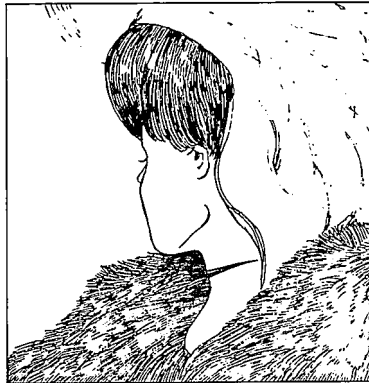
Extrasensory Perception (ESP)

Sensation and perception can all be explained by science. But there are some people who claim that they have perceptions beyond the capabilities of our sensory systems. This is called **extrasensory perception** or ESP. It involves forms of energy that cannot be measured or are not yet acknowledged by science. A few psychologists believe in something like ESP and point to quantum physics for an explanation.

Parapsychology is the study of subjects like ESP. It includes different forms of ESP like telepathy, psychokinesis, clairvoyance, and precognition.

■ **Telepathy:** This is the ability to transmit thoughts over a distance or read somebody's mind.

■ **Psychokinesis:** This is the ability to move objects or affect physical processes outside the body through mental effort alone.

■ **Clairvoyance:** This is the awareness of physical objects or events without sensory cues.

■ **Precognition:** This is an ability to see or experience the future.

Parapsychologists are usually well-trained scientists who are motivated to explore the unknown. Unfortunately, there is no experimental evidence to prove a cause and effect claim about ESP.

Lesson Summary

Our perceptions are our interpretations of the stimuli from the world around us. We process these stimuli in two ways: by bottom-up processing, where we focus on the raw material that enters through our sensory systems, and by top-down processing, where we focus on how our expectations and experiences influence our interpretation of incoming stimuli.

In this lesson, the ideas of Gestalt psychology, namely the concept of figure–ground and the Laws of Pragnanz, were discussed.

Depth perception, motion perception, perceptual constancy, and perceptual set are all abilities that enable us to interpret the world around us in a non-frightening way. Cues from sensory information are used to draw conclusions about what we see in our world.

Finally, the lesson touched briefly on ESP.

L E S S O N   6 :   M O T I V A T I O N

Lesson Introduction

Why do you do what you do? For over a century, psychologists have searched for the roots of behaviour in an attempt to understand why we do what we do.

Motivation is the need or desire that energizes behaviour and moves it toward a goal. Over the years, there have been a number of theories of motivation. They are biological, cognitive, and clinical.

This lesson will cover the ideas presented by the different theories of motivation. This will help us see what motivates us and others. As well, hunger motivation and social motivation will be discussed.

Motivation is about why we channel our energies one way or another. It relates to all of our accomplishments. It is about how we shape up our bodies, reach deep down during times of stress, or are there for a person who needs support. It is relevant in everything we do in life.

Historic Explanations

Instinct Theory

An **instinct** is an inherited, preprogrammed, complex behaviour that occurs in a species. **Instinct theory** was the first explanation of motivation. In time, a long list of instincts developed, but the theory only described human behaviour, it did not explain it.

The following are examples of instincts:

- the sucking behaviour of newborn human babies
- the return of salmon to their birthplace
- the type of nest that a bird builds

Drive Reduction Theory

Drives are a state of tension that results from an internal imbalance. We tend to want to reduce the tension. **Drive reduction theory** is the idea that a physiological need creates a state of tension—this is the drive—that motivates us to satisfy that need.

Eating and drinking are examples of drive-reducing behaviours.

It was believed that all motivation originated with a biological imbalance or need. The organism was motivated when it needed something that was not present.

The following are such examples:

- Hunger is the need for energy to be obtained from food.
- Thirst is the need for more water.

Biological Explanations

Some psychologists believed that the key to understanding motivation was to understand the biological processes behind it. **Biological motives** are those that are wired into the nervous system.

These biological motives include:

- hunger
- thirst
- pursuit of pleasure
- avoidance of pain

Arousal Theory

Arousal theorists believe that each of us has an optimal level of stimulation that we like to maintain. This theory explains the motivation behind our behaviours as our attempts to maintain this optimal level of stimulation.

If your optimal level of stimulation is low, then you go for a walk or talk on the phone. If it is high, then you might workout or listen to your favourite music.

A law was developed according to which psychological arousal helps performance, but only up to a certain point. This law is called the **Yerkes-Dodson Law**. It states that the optimal level of arousal depends on the difficulty of the task. Too much or too little arousal can decrease performance. For example, if you are doing a simple task, then you want a

high level of arousal to get the best performance. For difficult tasks, you want a lower level of arousal to get the best performance.

Homeostasis Theory

Another biological theory of motivation is **homeostasis**. This theory focuses on maintaining a balanced internal state.

This includes hormone levels, water levels in our cells, body temperature, and blood sugar levels. Any change needs to be corrected.

The biological explanations help explain motivation; nonetheless, the cognitive explanations that follow make it even clearer.

Cognitive Explanations

Cognitive theories examine the role our thoughts play in motivating our behaviour. Let's begin by looking at two types of motivation: intrinsic and extrinsic.

- **Intrinsic motivation** is the desire to perform behaviour for its own sake; not for any external reward.
- **Extrinsic motivation** is the desire to perform behaviour because of promised reward or threats of punishment.

Why do you do what you do? Is it for money, to get an A on your report card, or to be the best and the smartest?

So which is better? Surprisingly, both intrinsic and extrinsic motivation work together. Sometimes external rewards can help us achieve a goal. The problem with external rewards is that behaviours maintained by extrinsic motivation alone may not continue once the reward is removed.

Clinical Explanations

Psychologists who assess and treat people with psychological disorders have shed additional light on the question of why we do what we do. We'll begin with the work of Abraham Maslow, a humanistic psychologist.

Maslow's Hierarchy of Needs

Maslow devised a pyramid-shaped diagram to express his ideas. At the bottom, he put the biological needs. At the top, he put higher level needs such as spiritual needs. In between these two was a range of other needs.

Figure 2.40   **Maslow's Hierarchy of Needs**
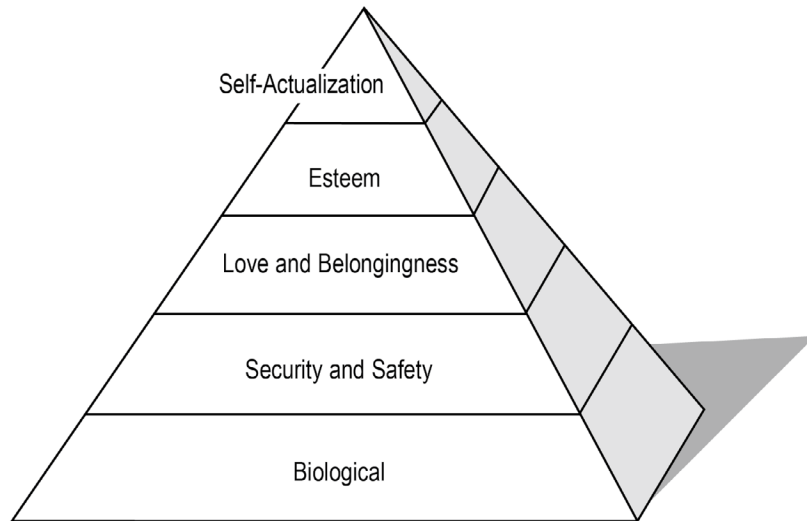
- The first needs are biological needs such as eating and sleeping. They are on the bottom level and are necessary for survival.
- The next needs are security or safety needs such as having a place to stay, knowing where your next meal is coming from, and avoiding danger. This is the need to feel that the world is organized and predictable.
- The next level is love, or love and belongingness. This is the need to be with other humans, to be loved, to love, and to be accepted.
- The next level is labelled esteem. This is the need for self-esteem, and for being secure and independent. It is also the need for recognition and respect from others.
- The fifth level is self-actualization. This is the need to live up to your full and unique potential. It means using your talents and feeling good about yourself. It involves seeing yourself as a good, honest person who has compassion for others. It includes having a desire to learn and understand new ideas just for the satisfaction it brings. It also means enjoying and cultivating beauty in our surroundings.

Maslow's theory proposes that we must satisfy our basic needs before we can try to meet higher-level safety and psychological needs. Critics of this theory state that some people don't satisfy their needs in the order that Maslow believed and that others never reach the highest level.

Learning Activity 2.5: Maslow's Hierarchy of Needs

You and a bunch of your friends are stranded on a deserted island in September. The island is in the northern Atlantic Ocean. There are no other people and there are no buildings on the island; however, there is vegetation.

According to Maslow's hierarchy of needs, indicate what would happen if the needs that are listed below are not met. Complete the chart.

Need	What will happen if the need is not met?
Food	
Water	
Freedom from pain	
Safety	
Security	

continued

Need	What will happen if the need is not met?
Protection	
Love	
Belonging	
Closeness	
Esteem	
Self-esteem	
Self-actualization	

Check the answer key.

Achievement Motivation

Clinical psychologists sometimes find themselves treating people who are struggling to succeed in life. Why do some people succeed while others fail?

Achievement motivation is the desire for significant accomplishment. It is the desire for mastery of things, people, and ideas, as well as for attaining a high standard. People with high achievement motivation persevere, even in the face of difficulty. This is because these people have a passion to be the best that they can be.

Motivating Ourselves and Others

How can we motivate ourselves and others? You will be happy to know that there are three ways that can help you develop your self-motivation.

- Associate your high achievement with positive emotions. For example, if you do well, celebrate. It wasn't just good luck.
- Connect your achievement with your efforts. For example, work hard at whatever you do and it will pay off.
- Raise your expectations. For example, set your goals high enough so that you are challenged, but not so high that you can't reach them.

Now that you know how you can motivate yourself, how do you motivate others? There are four things that you can do to motivate others.

- Promote intrinsic motivation: You know that intrinsic motivation produces greater achievement. Provide challenging tasks that foster curiosity. Don't use rewards that manipulate behaviour. Keep in mind to always praise effort rather than ability.
- Attend to individual motives: Try to discover what motivates each individual. Pay extra attention to those that need it.
- Set specific, challenging goals: If your goals are clear, they direct attention, and they stimulate creative strategies, this alone will be motivating.
- Choose an appropriate leadership style. There are two basic styles.
  - **Task leadership** is goal-oriented. Leaders who use this style set standards, organize work, and focus attention on goals.
  - **Social leadership** is group-oriented. Leaders who use this style build teamwork, mediate conflict, and offer support.

Conflicting Motives

Sometimes the urge to do something worthy or good is directly opposed by the fact that it involves pain, inconvenience, or hard work. There is a conflict between two opposite motives.

There are three forms of motivational conflict. They are as follows:

1. approach/approach
2. avoidance/avoidance
3. approach/avoidance

- **Approach/approach** is a positive, win-win situation. When you are offered two attractive choices, you are enticed by both possibilities. Both alternatives are equally desirable in this type of conflict. You must consider each choice in turn and you may waver from one to the other until you finally decide. Sometimes, you put your decision on hold until you have a chance to think about it. Gradually, one alternative gains a slight edge over the other and you decide in its favour. Later, you may reverse your decision. This type of conflict is easy to solve.
- **Avoidance/avoidance** is not a good situation to be facing. You are offered two unattractive choices and are asked to choose one. Your strategy will be to assess both possibilities carefully and choose the lesser of two evils.
- **Approach/avoidance** is where there are both positive and negative values. Few choices in our lives are either all good or all bad. Many of them will have a mixture of both. When this happens, you are pulled in opposite directions as you focus on the good points and then the bad points. These conflicts are usually much more complex, especially when they have to do with your personal relationships.

Look at the following examples and decide which type of conflict is involved.

1. You want to maintain a high grade-point average and need to study hard before the exam tomorrow, but you have been asked to go to a party at your best friend's house tonight.
   approach/avoidance

2. You are happy to be doing well on your diet but now you have to decide whether to go with friends for lunch at your favourite fast-food restaurant or to stay and eat your low-calorie snack in the cafeteria.
   approach/avoidance

3. In order to be allowed to borrow the family car for the evening, you have to decide between doing two different things that you absolutely hate doing.
   avoidance/avoidance

4. You entered your name into a contest and won a seven-day Caribbean cruise. You have to decide between an eastern Caribbean cruise and a western Caribbean cruise.
   approach/approach

5. You are overweight and out of shape. You are given a choice of two daily exercise routines.
   avoidance/avoidance

Hunger

Before ending this lesson, we will take a look at one idea from the theory on homeostasis that still remains current. This is the idea that biological motives resemble a control system that keeps the body regulated. We know that hunger and thirst operate as homeostatic systems. To better understand how this all works, let's look at some of the key substances in the body and then see how the brain controls these substances.

Physiology of Hunger

The key substances in the body are glucose, insulin, leptin, and orexin.

- **Glucose** is a form of sugar that circulates throughout your entire body. If you run low on glucose you will feel hungry.
- **Insulin** is a hormone that allows your cells to use glucose for energy or to convert it to fat. When your insulin level goes up, your glucose level goes down.
- **Leptin** is a protein that is produced by fat cells that send out a stop-eating message.
- **Orexin** is a hunger-triggering hormone that is produced by the hypothalamus. When your glucose level drops, your orexin level rises and you feel hungry.

Your brain controls all of the above substances. Your hypothalamus actively regulates your appetite. The hypothalamus acts like a weight thermometer. It is designed to maintain a **set point**. This is the weight an adult should be when they are not trying to lose or gain weight.

Set-point theory has three underlying concepts.

1. We have a **basal metabolic rate**. This is the resting rate at which we burn calories for energy.
2. We have a specific number of fat cells. This number can expand in size and increase in number.
3. We have hormones that work together to keep our weight where it's designed to be.

When you diet, you don't lose fat cells; rather each fat cell shrinks. When the fat cells get small enough, you take action to restore fat levels to their set point. When your fat levels get too low, you lower your activity level as well as body heat in an attempt to conserve energy. This is why it is harder to lose weight when you're below your set point and easier to gain weight. The body acts as though it wants to restore the level of fat to the set point. This causes people to regain the weight they have lost after a successful diet.

Is dieting hopeless? No, but you must create conditions for your body to want to draw upon its energy supplies. This could involve taking in fewer calories, increasing energy consumption by exercising, or doing both.

Let's get back to the **hypothalamus**. The hypothalamus monitors and helps to control the ratio of glucose and insulin. This makes us feel hungry when we need to eat.

Research has shown that if you stimulate a part of the hypothalamus called the **lateral hypothalamus**, then you will eat. If you destroy this area, then hunger is destroyed and you will starve.

Another part of the hypothalamus is called the **ventromedial hypothalamus**. If you stimulate this part, you will stop eating. If this area is destroyed, you will eat and gain more and more weight unless you are deprived of food.

Not all researchers believe that biology has the only answer to understanding our drive to eat. External incentives and culture can also have an effect.

Environment and Hunger

Some of the reasons that we get hungry have to do with how motivated we are by external food cues, such as the attractiveness or availability of food. The sight, sound, and smell of food are called **external incentives**. People who are motivated by these things are called **externals**. **Internals**, on the other hand, are less affected by the presence and presentation of food and respond more often to internal hunger cues. Everyone responds to both types of cues but to a greater or lesser extent.

Culture can shape our attitude toward eating and affect our food preferences. The foods that we are raised with are most likely the foods we find most appetizing. We usually prefer foods our family, region, and culture prefer because those are the foods we learned to like.

Eating Disorders

Research into hunger motivation has an important practical application— eating disorders. Researchers seek to apply what they know about hunger and eating to treat individuals with harmful eating patterns. There are three common eating disorders. They are bulimia, anorexia nervosa, and obesity.

Bulimia

Bulimics eat large amounts of food in a short period of time. This is called **bingeing**. They then get rid of the food by vomiting, excessive exercise, or the use of laxatives. This is called **purging**. Bulimics are obsessed with food and their weight.

Anorexia nervosa

Anorexics starve themselves to below eighty-five percent of their normal body weight and refuse to eat due to their obsession with weight.

Obesity

People with diagnosed obesity are severely overweight by over one hundred pounds. This excess weight threatens their health. Obese people often have unhealthy eating habits rather than the food obsessions of the other two disorders.

What causes eating disorders? Some believe that there is a genetic link. Twin studies show that identical twins are much more likely to have the same eating disorder than fraternal twins. Another reason could be the presence of abnormal levels of chemicals. Without a doubt, genetic factors interact with a culture that pressures us to be thin. Our society bombards us with pictures of the "perfect body" in commercials and advertisements. We live in a weight-obsessed culture and there seems to be an increasing incidence of serious eating disorders, especially in women.

Lesson Summary

Motives energize and direct behaviour no matter if the goal is good or bad. Understanding motives will help us predict and control all kinds of behaviour.

Historically, instinct theory and drive-reduction theory were the first attempts to explain our motives. This led to biological explanations to explain behaviour as a response to underlying physical states. Arousal theory and homeostasis became the popular explanations. However, this was not enough. A cognitive component was needed in an attempt to explain behaviour in terms of how our thoughts direct our actions. Extrinsic motivation and intrinsic motivation give insight into the thinking behind some motivation. Clinical theories of motivation explain behaviour in terms of basic human needs for fulfillment. Maslow's hierarchy of needs shows that different levels of need must be met in an attempt to reach what he calls self-actualization.

In this lesson, helpful hints were given on how you can motivate yourself and others, and what to do when you have conflicting motives.

The lesson ended with a discussion of the biological and environmental factors that influence hunger and what happens when there are unhealthy motives, such as is the case with eating disorders.

Assignment 2.5: Theories of Motivation (12 marks)

In this lesson, several theories of motivation were explained. Provide the theory, behaviour, or explanation to complete the following chart. Please review the samples provided below. One mark will be given for the behaviour, theory, or explanation provided.

Samples

Behaviour	Theory	Explanation
Working on a difficult puzzle	Arousal theory	Tackling the difficult task increases the intellectual stimulation of the individual in a way that is rewarding.
Crying when you are hurt or upset	Instinct theory	This is a reflexive behaviour that increases the likelihood of survival by drawing the attention of others who could provide aid.
	Drive reduction theory	Physical or psychological distress adversely arouses an individual who releases the excess energy by crying.

Assignment

Behaviour	Theory	Explanation
Getting a glass of water when you are hungry		
Developing an intimate relationship		

continued

Behaviour	Theory	Explanation
	Arousal Theory	
	Arousal Theory	
	Instinct Theory	
	Instinct Theory	

L E S S O N   7 :   E M O T I O N

Lesson Introduction

Our emotional state is closely related to our motivation. Each behaviour or action is accompanied by a feeling about that particular behaviour or action. Emotion influences motivation and motivation influences emotion.

Psychologists who study emotion explore and explain the physiological states, cognitive experiences, and measurable behaviours that accompany feelings.

In this lesson, you will learn about three different theories of emotion. We will look at how we communicate emotion to others and what impact gender and culture have on our own emotions. The emotion of fear will be looked at in depth.

Theories of Emotion

Let's begin with a definition of **emotion**. Emotions are full-body responses involving three components.

- Physical arousal

  This is the increase in heart rate when you get good news and the decrease in heart rate when you are unhappy.

- Expressive behaviours

  These are the behaviours that you exhibit when you are involved in a good or bad situation.

- Conscious experience

  This is how you interpret what is going on in the situation.

Theories of emotion have focused on two key questions.

1. Which comes first; physiological arousal, or the subjective or one-sided experience of an emotion?
2. Can we react emotionally before appraising a situation, or does thinking always precede emotion?

Historical Approaches

Historically there have been two theories of emotion. These theories complement each other. In other words, each one provides some explanation of why or how we experience emotions. The two historical theories are the James-Lange Theory and the Cannon-Bard Theory.

James-Lange Theory of Emotion

In the late 1800s, James and Lange independently suggested the same theory of emotion. They suggested that emotion stems from the perception of changes in the body. Emotion is associated with bodily reactions; more specifically, reactions of the autonomic nervous system, such as shaking or sweating. Our experience of emotion is our awareness of our bodily responses to the emotion-producing stimulus.

> Let's use the example of Little Red Riding Hood seeing the wolf for the first time. Seeing the wolf is the stimulus. Her heart would begin to pound and then she would label this reaction as fear.

Cannon-Bard Theory of Emotion

Cannon and Bard disagreed with the James-Lange theory of emotion. They noted that the heart races when we feel a range of emotions—fear, anger, excitement. They proposed that an emotion-arousing stimulus simultaneously triggers physiological responses and the subjective experience of emotion. In other words, they happen at the same time.

> If we look at our example again, the wolf is still the stimulus, but, this time, when Little Red Riding Hood's heart races, how does she know if she is afraid or in love? The biological change and the cognitive awareness of the emotional state occur simultaneously.

Each of these theories helps us to understand emotion. We observe changes in our bodies and we know that the brain and nervous system play a role in our conscious feelings. Recent research links hormone levels to emotion; more specifically, testosterone levels are linked to aggression. But what comes first: our thoughts about a situation or our experience of the emotion?

Schacter's Two-Factor Theory of Emotion

In the 1960s, Schacter developed the two-factor theory of emotion. He pointed out that both our physical responses and our cognitive labels, which are our mental interpretations, combine to cause any particular emotional response. Emotion depends on two factors, biology and cognition. The key to this theory is the label that we give to the feeling. Our physical experiences of emotion are so similar that we must appraise and label our reactions in order to experience an emotion.

> Let's get back to our example. The sight of the wolf is the stimulus. Little Red Riding Hood's heart begins to race. She assigns the cognitive label of "I'm afraid" and she labels her reaction as fear.

Not every psychologist or researcher agreed with these theories.

In the 1980s, Zajonc argued that emotion and cognition are separate, and that our interpretations of situations are sometimes slower than our emotional reactions. For example, before we know what we think about a situation, we know how we feel about it. He believed that the pathways in our brain carry or transmit messages. Some take a shortcut and go directly to the amygdala which is the emotion control centre in the brain. It is because of these shortcuts that our feelings are more likely to control our thoughts rather than our thoughts control our feelings. Zajonc believed that emotions are basic to human existence and that, in the history of our species, they developed before cognition.

Not surprisingly, not everyone agrees with Zajonc. In the 1990s, Lazarus agreed that our brain can process information outside of our conscious awareness and that some emotional responses do not require conscious thought. But, he believed that there must be at least a minimal amount of unconscious thinking, even for emotions that we feel instantly. This is how we know to what we are reacting.

For complex emotions such as love, happiness, shame, and guilt, there is a conscious interpretation, appraisal, and memory of earlier experiences. In other words, how we think about the situation also affects these emotions.

- If you think positively about a situation, it makes you feel better.
- If you think negatively about a situation, it makes you feel worse.

How many emotions are there? In the 1980s, Plutchik argued that there are eight basic emotions and that each emotion is related to survival.

The emotions are

- anger (which leads to destruction of the obstacle)
- fear (which leads to protection)
- sadness (which leads to a search for help and comfort)
- disgust (which leads to rejection and pushing away)
- surprise (which leads to a turning inward)
- curiosity (which leads to exploration and searching)
- acceptance (which leads to sharing)
- joy (which leads to reproduction, courting, and mating)

Expression of Emotion

Non-verbal Communication

We communicate emotions all the time, sometimes without saying a word. This is called **non-verbal communication** or body language. Things like our facial expressions, tone of voice, hand gestures, and rolling of the eyes often give us away. We can communicate a full range of emotions without uttering a word. How we do this and how body language is interpreted have a lot to do with what our culture has taught us about appropriate public behaviour.

Gender and Cultural Effects on Emotion

Research has shown that females are better at reading non-verbal emotions than males. It has also been shown that both males and females are better at reading the body language of someone else of their own gender than of the opposite gender.

Males and females express emotion differently. Females tend to smile more, gesture more, and have altogether a more expressive face than males. Why is this so? Are females and males physiologically different or have they each learned to behave differently?

There seem to be two factors that affect the way we learn to express and interpret emotions.

1. Power is the key issue when we are interpreting non-verbal communication. The person with less power is more motivated to read the non-verbal cues of the person who has more power. Gender doesn't seem to matter here.

   People raised in expressive families or in cultures that value being emotionally expressive are likely to be more expressive. Once again, gender doesn't matter.

2. Culture can also influence how we express emotions and how we interpret the emotions of others. There are things called display rules that are culturally-based and that tell you how and when a person may express emotion. These include things like when to smile, what to do when you are angry, and when to look someone in the eye.

   Research has shown that regardless of culture, certain facial expressions will be interpreted the same. Paul Ekman showed photographs of facial expressions to people around the world and asked participants to guess the emotion. He found that we all seem to understand some basic facial expressions regardless of our country or origin.

Before moving on to the next lesson, let's take a look at one emotion—fear.

Fear

When you experience fear your body undergoes changes. This happens without you even thinking about it. Your body needs to prepare for this situation.

- Your stomach turns inside out, your muscles tense up, and your mouth goes dry.
- Your body's autonomic system also moves into high gear. Remember the two divisions of the autonomic nervous system—the sympathetic division and parasympathetic division—from earlier in this module.
- Your blood flows away from organs that you don't need and toward the organs that you do need in order to deal with the situation.
- Your pupils dilate, which allows more light into your eyes to improve your vision, your liver dumps sugar into the bloodstream for energy, and you perspire to cool your body.
- After the arousing part of the sympathetic division is finished, the calming side, known as the parasympathetic division, slows down your breathing and your heart rate, and decreases the secretion of stress hormones.

Lesson Summary

Emotions are full-body responses that involve physical arousal, expressive behaviours, and conscious experience. Theories of emotion have focused on which one comes first—physiological arousal or the subjective experience—and whether thinking precedes emotion. Three theories of emotion were presented: the James-Lange theory, the Cannon-Bard theory, and Schacter's two-factor theory.

We express our emotions to others by sending verbal and non-verbal messages. We use facial expressions, tone of voice, hand gestures, and posture to communicate with those around us.

There seem to be gender differences when it comes to reading non-verbal cues and expressing emotions.

Finally, there are cultural differences that tell us how and when people may express emotion.
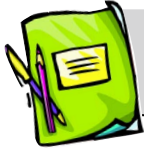
Learning Activity 2.6: Communicating Emotion with Body Language

Consider the following job openings. What emotional qualities might an interviewer consider important for a potential employee? What body language could be used during the interview to help demonstrate those emotional qualities?

Occupation	Emotional Qualities	Body Language
daycare worker for two-year-old children		
manager of a business		
employee in a crowded office where equipment and desks are often shared		

Occupation	Emotional Qualities	Body Language
salesperson for difficult to sell products		
caregiver in a retirement home		
employee for a company created to invent new products		

Lesson 8: Stress and Health

Lesson Introduction

Are you feeling "stressed out" with regard to all the material you need to know in this course? In this lesson, you will learn how we define stress, how we typically react to stress, and what impact stress has on our health. Health psychologists are interested in the impact of stress. You will learn that certain behaviours and thoughts can improve your health and wellness, and help prevent illness. We will also examine how the beliefs and teachings of the aboriginal Medicine Wheel can be used as one of many means to achieving well-being.

Stress

Stress is a part of our everyday life. **Stress** is the process by which we perceive and respond to events that we see as threatening or challenging.

The term **stressor** is used to describe the factors creating stress.

The **stress reaction** is the defence used to respond to or conquer stress.

Remember, stress is a process of perceiving and responding. Our appraisal of an event as potentially threatening or challenging can make a huge difference in what we experience and in how effectively we respond.

As mentioned in the introduction, the field of health psychology focuses a lot of attention on how stress affects our health. The following are important questions in the field of health psychology:

- How are stress and illness related?
- How do our perceptions of stress affect our health?
- Can we control our reactions to stress?
- What behaviours and attitudes help prevent health problems?

Responding to Stress

Depending on how you react to stressors, your health may suffer. If you view a stressor as a threat, you're far more likely to panic and freeze up. If you view the stressor as a challenge, your response will be focused and you're more likely to overcome the obstacle. Your perception directly affects your emotional responses.

Our emotional and physical responses to stress vary.

In the 1920s, Walter Cannon found that stressors trigger the release of stress hormones into the nervous system. This increases your heart rate, dulls your sensation of pain, and sends more blood to your larger muscles. This is the **fight-or-flight response** that we talked about earlier in this module. This concept prepared the way for the research of Hans Selye.

Selye is responsible for identifying the body's adaptive response to stress. He called it the **general adaptation syndrome (GAS)**. According to Selye, it has three phases: **alarm**, **resistance**, and **exhaustion**.

Alarm

An alarm reaction happens when your nervous system is activated following an emotional or physical trauma—like in Cannon's fight-or-flight response. Your body is ready for the challenge.

Resistance

In this phase, stress-related hormones keep your respiration, temperature, and blood pressure high, but your body can't keep up this pace. Your body's reserves become depleted. It appears that the hippocampus shrinks when these hormones are released. Remember that this brain structure is responsible for memory. There has been research to indicate that people who experience trauma may experience memory difficulties.

Exhaustion

With exhaustion comes greater susceptibility to illness and disease. Our bodies can handle temporary stress; however, prolonged stress will produce physical deterioration.

Stressful Events

All stressors fall into one of three categories: daily stress, significant changes, and catastrophes.

Daily Stress

Daily stress can be thought of as hassles. Every incident by itself is not a big deal. Hassles that are continually being repeated can affect your health depending on your reaction to them. The persistent hassles in the workplace can produce physical, mental, and emotional exhaustion. This is often referred to as burnout. The results of burnout include depression from the emotional exhaustion, a decrease in performance or productivity from the physical exhaustion, and cynicism or pessimism from the mental exhaustion.

Significant Changes

Significant personal changes in your life are the second category of stressors. These can include the death of a loved one, leaving home, living on your own, divorce, and any kind of life transition.

Catastrophes

Catastrophes are large, unpredictable, and life-threatening events. Examples include earthquakes, wars, floods, tornados, and fires. Catastrophes often mean prolonged exposure to stress which puts us at psychological and physical risk due to the stress.

Impact of Perceived Control

The impact that life events may have on your health depends on how you appraise the situation as well as on your own personal outlook.

If you think of the stressor in a negative way and as something that is beyond your control, then your health may be affected. This is called having a pessimistic outlook.

On the other hand, being positive and feeling that you have a sense of control is called having an optimistic outlook. Optimism seems to offer some protection against the impact of stress on the immune system. Those with strong immune systems are less likely to become fatigued.

Once again, there is interplay between mind (your perceptions or appraisals) and body (your physiology). How is the immune system involved? Stress hormones, which use up your body's reserves of disease-fighting white blood cells, are released. The immune system is then weakened to fight off disease. This can have a huge impact on minor illnesses. Naturally, this leads us to wonder whether stress affects major illnesses like cancer and heart disease.

Stress and Disease

Cancer and Stress

The research on the relationship between cancer and stress is not definitive. This means that some studies have shown a connection between stress and cancer, while others have not found any connection of any significance. The research has shown that stress does not appear to create cancer cells. It does, however, affect the body's ability to fight off disease.

Stress and Heart Problems

Research has shown that there seems to be a connection between stress and heart problems. High levels of stress increase the risk of heart disease. Friedman and Rosenman discovered this connection over fifty years ago. Their findings led to the terms Type A and Type B personalities.

- **Type A personality:** These people tend to be impatient, competitive, hard-driving, verbally aggressive, and anger-prone. They are more likely to have heart attacks.

- **Type B personality:** These people tend to be more laid-back, easygoing, and relaxed. They are less likely to have heart attacks.

Healthy Lifestyles

There are ways to reduce the negative influences of stress on the immune system. Having a healthy lifestyle and a healthy attitude are part of the concept of wellness. This is the promotion of psychological and physical well-being.

One key factor that contributes to wellness is exercise. Research has shown that exercise can increase the output of the mood-boosting chemicals in your nervous system. Exercise can help you lower your blood pressure, increase your memory, sleep better, and reduce your risk of heart attack.

Another factor that contributes to wellness is having a social support system of family and friends. These social ties provide the connectedness and sense of belonging that is beneficial to emotional and psychological health. Stress is unavoidable, but the support of family and friends helps fight against the impact of stress.

The last factor that contributes to wellness is religion or spirituality. Research has shown that there seems to be a positive correlation between being religiously active and living a long life. The reasons that researchers give for this correlation are the following:

- The religious community is involved in the promotion of a healthier lifestyle.
- The social support offered by the community is positive.
- The optimism that is associated with a religious world view affects anxiety levels because the community promotes gratitude and hope for the future.

The interest in wellness has led to a new subfield of psychology called positive psychology.

Positive Psychology

Positive psychology focuses on the study of the factors that are necessary for optimal functioning. It all boils down to having positive experiences that promote well-being. The more positive experiences that you have, the more likely you are to

- have better relationships
- contribute to your community
- do better in school and sports
- provide leadership
- help others

This ultimately will result in you being less of a drain on the psychological and physical health system. Researchers in the area of positive psychology have identified three kinds of experiences that have the greatest influence on a person. They are flow, happiness, and optimism. Let's look at each one separately.

Flow

Have you ever been involved in an activity and completely lost track of time? This is an example of flow. Activities that we perform without extrinsic rewards put us in a state of flow. The activity must require some sort of skill and can take place in the workplace or school, or can be part of the activities that you do in your leisure time.

Finding your own flow can be done by looking at your strengths and the types of work that may prove to be satisfying and successful. Ask yourself the following questions:

- Which activities give me pleasure?
- Which activities leave me wondering "When can I do this again?" rather than "When will this be over?"
- What sorts of challenges do I like?
- What sorts of things do I learn easily?

Happiness

Happiness is another experience that leads to well-being. Happy people tend to have

- high self-esteem
- optimistic, outgoing, and agreeable natures
- close friendships
- satisfying marriages
- work and leisure activities that are intrinsically motivating
- meaningful religious connections
- restful sleep
- exercise in their life

Research has shown that happiness is not related to

- age
- gender
- education level
- becoming a parent or not
- physical attractiveness

Optimism

Optimism is the third experience that leads to well-being. It does this by explaining bad events as being temporary and not your fault. If you find that you have a pessimistic attitude, then there are things that you can do to help yourself.

Distraction

In this technique, you delay your pessimistic thought until a later, more appropriate time.

Disputation

In this technique, you argue with yourself about the pessimistic belief. You can do this by

- realizing that your negative thought is usually unfounded
- looking for evidence from other events to disprove your negative belief
- considering alternatives as possible explanations for what is going on in your life
- avoiding feeling like it's the end of the world

There are two things that increase people's risk of developing serious diseases. The two things are smoking and being overweight. Never having a cigarette and maintaining an ideal body weight will significantly improve your state of wellness.

Alternative Medicine

Our health care system, besides providing traditional medical practices, has been expanding to include complementary and alternative medicine. Some of these practices include the following:

- acupuncture
- massage therapy
- homeopathy
- spiritual healing
- herbal remedies
- chiropractic care
- aromatherapy
- bioelectromagnetic applications

- manual healing
- mind-body control

Supporters of these applications offer inspirational testimonials; nevertheless, critics point out that people should consult physicians for diagnosable, curable diseases and employ alternative medicine when they are either incurable or basically well.

Aboriginal Perspective and the Medicine Wheel

The centre of the Medicine Wheel represents the Great Spirit—the centre of creation. This is the centre for balancing and understanding ourselves as human beings. There are eight paths that lead to the centre. Through these paths we learn what is valuable and important in achieving a good life. Through the Great Spirit we learn that all things in creation work in unity—as one.

Extending from the circle of the Medicine Wheel is an eight-pointed star. Each point on the star represents eight tipis and each tipi represents one of the seven original spiritual laws. These laws act as the spiritual foundation for a balanced and peaceful life. The eighth point of the star represents the lodge of the ancestors.

Each law is represented by an animal in order to keep the human being connected to nature.

The seven original spiritual laws are as follows:

1. **Love** is represented by the **eagle.**
2. **Respect** is represented by the **buffalo.**
3. **Courage** is represented by the **bear.**
4. **Honesty** is represented by the **sabe.**
5. **Wisdom** is represented by the **beaver.**
6. **Humility** is represented by the **wolf.**
7. **Truth** is represented by the **turtle.**

Figure 2.41 **Medicine Wheel**

Figure 2.41 **Medicine Wheel**
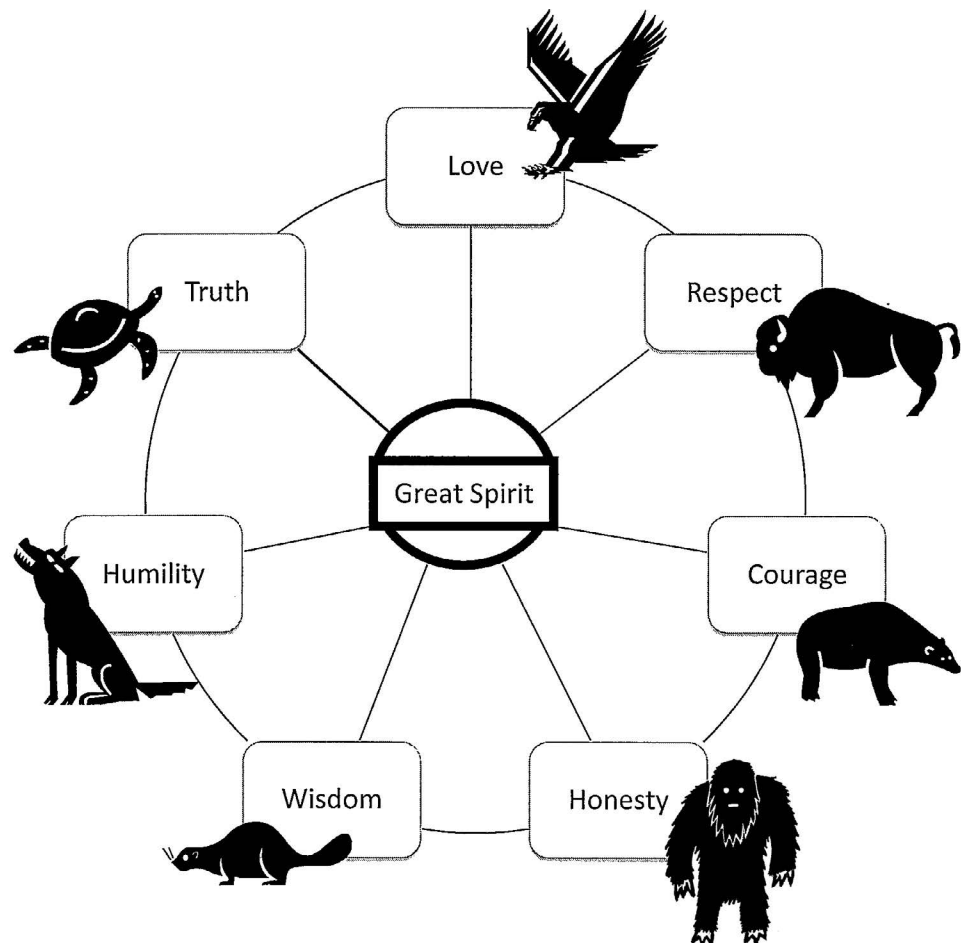
1. Love

Love given to the Great Spirit was symbolized by the eagle. Love is expressed by loving oneself. The eagle was chosen because it was the one that could reach the highest in bringing vision to the seeker. Love was considered the greatest and most powerful medicine.

2. Respect

Respect given to the Great Spirit was symbolized by the buffalo. The buffalo was chosen because no other animal was more important to the existence of the Aboriginal people than the buffalo. A single buffalo could provide food, shelter, clothing, and utensils for daily living. The buffalo, through giving its life and sharing every part of it's being, showed the deep respect it had for the people.

3. Courage

Courage given to the Great Spirit was symbolized by the bear. To have courage is to overcome the fears that prevent us from living out our true spirit as human beings and from listening to the heart. The bear was chosen because, by nature, it is a very gentle animal.

4. Honesty

Honesty given to the Great Spirit was symbolized by the sabe (the sasquatch). To be honest meant being an honourable person who was free from fraud and deceptions. The sabe was chosen because long-ago there was a giant who walked among the people to remind them to be honest to the laws of the Creator and to be good to their word.

5. Wisdom

Wisdom given to the Great Spirit was symbolized by the beaver. To know and understand wisdom is to know that the Creator gave everyone special gifts which were to be used to build a peaceful and healthy environment. The beaver was chosen because the beaver uses its special gift—sharp teeth— for cutting trees and branches to build dams. Human beings need to use their gifts in order to have a strong spirit and build a peaceful and healthy community.

6. Humility

Humility given to the Great Spirit was symbolized by the wolf. To be truly humble is to recognize that there is a higher power and that we are all equal. We must consider our fellow man before ourselves. The wolf was chosen because it bows its head, not in fear but, out of humbleness in your presence. The wolf will take food back to its den before it takes the first bite itself.

7. Truth

Truth given to the Great Spirit was symbolized by the turtle. To know truth is to be faithful to the laws. The turtle was chosen because there are thirteen moons on the back of the turtle which represent the truth of one cycle of the earth's rotation around the sun.

Eight Paths to Understanding Life

Within the Medicine Wheel are eight paths which lead to the centre of the wheel.

1. The fist path is the path of **Spirit—Faith**. It is where one must first believe and have faith, and then one will see what is invisible to most people.

2. The second path is the path of **Earth—the Womb**. It is on this path that man learns of the sacredness of the earth and of the woman. It is from the earth that we receive what we need to live.

3. The third path is the path of **Emotions—the Heart**. Through the heart we feel the power of love which makes us compassionate and warm-hearted. We learn to overcome the negative emotions that can destroy us and make us sick.

4. The fourth path is the path of **Air—the Voice**. On this path, we learn that the words we speak can be considered good or bad medicine. We should use words that encourage, not destroy.

5. The fifth path is the path of the **Body—the Bones**. Bones provide the framework for the human body. On this path we learn to take care of our bodies.

6. The sixth path is the path of **Water—the Blood**. Water is turned into blood for our bodies. On this path we learn about the power of water as a purifier and a cleanser.

7. The seventh path is the path of the **Mind—the Eyes and Ears**. The mind reacts and believes what it sees and hears. On this path, one learns to see what is beautiful, such as nature. The more that you can see beauty in nature, the more you will see beauty in yourself and others.

8. The eighth path is the path of **Fire—Life Force**. It is fire that makes us warm and ignites the heart to beat.

Lesson Summary

Stress is the process by which we perceive and respond to stressors. These are the events in our life that we see as being either threatening or challenging. This lesson focused on different types of events and how our appraisal of these events can affect us. Selye's general adaptation syndrome was then explained. The connections between stress, and minor and major illnesses were discussed.

The next part of the lesson explained a new subfield of psychology called positive psychology. Ideas on how to achieve well-being or wellness were given. As mentioned, exercising, having social support and religious connections, not smoking, and not being overweight are ways to promote a healthy lifestyle.

The Medicine Wheel and its teachings were presented as an example of one way to achieve a balanced life.

Assignment 2.6: Stress (8 marks)

It seems that everyone you meet is stressed out. There are things to be done, deadlines to be met, social and family obligations, financial pressures, work-related problems, peer pressures, school issues, and so on.

Your manager at your part-time job knows that you are taking Grade 12 Psychology and he has asked you to make a presentation. Two marks will be given for an answer to each of the following:

- What are stressors? *(2 marks)*

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- What are the effects of stress? *(2 marks)*

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continued

Assignment 2.6: Stress (continued)

■ What influences a person's reaction to stress? *(2 marks)*

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■ What strategies can be used to deal with stress? *(2 marks)*

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MODULE 2 SUMMARY

Congratulations. You have finished the second module of the course.

Submitting Your Assignments

It is now time for you to submit your assignments from Module 2 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 2 assignments and organize your material in the following order:

❑ Module 2 Cover Sheet (found at the end of the course Introduction)

❑ Assignment 2.1: Brain Injury

❑ Assignment 2.2: Nature versus Nurture

❑ Assignment 2.3: Senses: Windows to the World

❑ Assignment 2.4: Applying Gestalt's Principles

❑ Assignment 2.5: Theories of Motivation

❑ Assignment 2.6: Stress

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Notes

M ODULE 2

Learning Activity Answer Key

M O D U L E   2   L E A R N I N G   A C T I V I T Y
A N S W E R   K E Y

Learning Activity 2.1: Sympathetic and Parasympathetic Nervous Systems

Think about a time when your sympathetic nervous system was aroused and answer the following questions.

Where were you?

What were you doing?

Were you in danger?

What did it feel like?

Did your parasympathetic system kick in?

What happened?

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

Learning Activity 2.2: Brain

The left hemisphere of the brain is primarily responsible for language, symbols, logic, and math.

The right hemisphere of the brain is primarily responsible for spatial, musical, and emotional tasks.

If the following behaviour relies primarily on the left hemisphere, put an L on the line beside the behaviour. Conversely, if it relies primarily on the right hemisphere, put an R on the line. If it involves both hemispheres, explain what each hemisphere does in the space under the behaviour.

1. Studying psychology concepts

   Studying psychology concepts is primarily a left hemisphere activity. Any illustrations and graphics also involve the right hemisphere.

2. Drawing a map

   Drawing a map uses both hemispheres. The left hemisphere interprets the labels and the right hemisphere interprets the images.

3. Daydreaming about what you are going to do later

   Daydreaming is primarily a right hemisphere activity.

4. Listening to a rock concert

   Listening to a rock concert involves both hemispheres. The right hemisphere attends to the music and the left hemisphere attends to the lyrics.

5. Thinking about the party tomorrow night

   Thinking about the party is primarily a right hemisphere activity because it involves fantasizing.

6. Reading your text messages

   Reading your text messages is primarily a left hemisphere activity.

7. 6 x 4 – 2 + 5

   Doing math is a left hemisphere activity.

8. Redecorating your room

   Redecorating your room is a right hemisphere activity.

9. Doodling

   Doodling is primarily a right hemisphere activity that processes spatial stimuli.

10. Doing this assignment

    Doing this assignment started out as a left hemisphere activity where you processed the words on the page and then shifted to the right hemisphere to get the picture of the words. Both hemispheres were also involved in writing down the answers.

Learning Activity 2.3: Superheroes

Science fiction writers are always searching for good plots that will capture the interest of their readers. Quite often, they transform normal human beings into superhuman beings—some good and some evil. For example, because of a laboratory accident, a person might develop superhuman strength.

In this learning activity, you are to create a superhero by pretending that it is possible to magnify or diminish the abilities of a specific region of the human brain. Identify the area that would have to be altered and then create a simple storyline in which the special ability would be useful.

Name of superhero

What super ability does this superhero possess?

What brain structure is modified?

What simple plot would encourage this superhero to come to the rescue?

There is no answer key for this learning activity as you are to apply the information covered in this lesson to the development of a superhero character.

Learning Activity 2.4: Thresholds

For each of the following situations determine which of the following concepts is necessary to complete the task successfully.

The concepts are: absolute threshold, just noticeable difference, and subliminal threshold.

1. You are learning a new language and you listen to a "Learn While you Sleep" compact disc. __**subliminal threshold**__

2. You are walking home from a party and you hear footsteps behind you. __**absolute threshold**__

3. You hear your name called and, without looking, you know who is calling you. __**just noticeable difference**__

4. You go to the store for your mom to buy potatoes that are on sale. You want the most for your money. __**just noticeable difference**__

5. You look for your contact lens that has fallen on the white floor. __**absolute threshold**__

6. A music group records "Buy our CD" backwards in one of their songs. __**subliminal threshold**__

7. You try to find your cellphone in your room during a power failure. __**just noticeable difference**__

8. You have been asked to judge the different chilies that the students taking the Foods and Nutrition course have made and pick out the best one. __**just noticeable difference**__

9. While judging the different chilies, you have to find the one that contains cinnamon. __**absolute threshold**__

Learning Activity 2.5: Maslow's Hierarchy of Needs

You and a bunch of your friends are stranded on a deserted island in September. The island is in the northern Atlantic Ocean. There are no other people and there are no buildings on the island; however, there is vegetation.

According to Maslow's hierarchy of needs, indicate what would happen if the needs that are listed below are not met. Complete the chart.

Need	What will happen if the need is not met?
Food	Starvation, death within 60 days
Water	Dehydration, death within a few days
Freedom from pain	Anguish, physical and mental degeneration
Safety	Feelings of insecurity, physical injury, and death
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Protection	Feelings of vulnerability and physical injury
Love	Psychological insecurity, lack of ability to return love, abuse
Belonging	Feelings of alienation
Closeness	Loss of a feeling of friendship, little social interaction
Esteem	Lack of feeling of worth, little respect from others
Self-esteem	Lack of self-concept and little self-respect
Self-actualization	Lack of fulfillment, goals not attained

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Consider the following job openings. What emotional qualities might an interviewer consider important for a potential employee? What body language could be used during the interview to help demonstrate those emotional qualities?

Answers will vary.

Occupation	Emotional Qualities	Body Language
daycare worker for two-year-old children	**patience, tenderness, energy**	**more smiles, more movement when walking and talking**
manager of a business	**firmness, assertiveness, organization**	**firmer handshake, use of props such as notebooks or note pad**
employee in a crowded office where equipment and desks are often shared	**gentleness, kindness**	**more smiles, more nodding of the head**
salesperson for difficult to sell products	**commitment to succeed, outgoing qualities, energy**	**firm handshake, lots of smiles, lots of movement when walking and talking**
caregiver in a retirement home	**patience, tenderness**	**more smiles, gentle handshake**
employee for a company created to invent new products	**enthusiasm, energy, creativity**	**lots of movement when walking and talking, more interesting clothing and hairstyle**

MODULE 2

Learning Activity Answer Key

MODULE 2 LEARNING ACTIVITY
ANSWER KEY

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employee for a company created to invent new products	**enthusiasm, energy, creativity**	**lots of movement when walking and talking, more interesting clothing and hairstyle**

MODULE 3

Developmental Psychology

LESSON 1: PRENATAL AND CHILDHOOD DEVELOPMENT

Lesson Introduction

Developmental psychologists study how our behaviours and thoughts change throughout the course of our lives—from birth to death. Studies in developmental psychology are usually either cross-sectional or longitudinal. In **cross-sectional** research, participants of different ages are used to compare how certain variables may change over the lifespan. Conversely, **longitudinal research** takes place over a long period of time by examining one group of participants over time.

Developmental psychologists have identified the following stages of development:

- prenatal
- infancy
- childhood
- adolescence
- adulthood

Many developmental psychologists investigate how genes influence development. In this lesson, you will learn about the first of three stages of development: prenatal, infancy, and childhood. Specifically, you will see what physical, emotional, cognitive, and social changes occur during this time period.

The lesson will end with a look at three key developmental issues: nature and nurture, continuity and stages, as well as stability and change.

Beginning of Life

Prenatal Development

The prenatal stage of development starts at conception and ends at birth. A newly fertilized egg is called a **zygote**. The single-cell zygote begins to divide into identical cells. It keeps dividing until **differentiation** occurs. This is when certain cells specialize in function. This is controlled by your genes. At this point, some cells become heart cells, others become brain cells, and others become liver cells. This occurs for about ten days. After this time, the zygote attaches to the mother's uterine wall where it will stay for about thirty-seven weeks.

At this point, it is no longer a zygote: it is an **embryo**. The embryo has a noticeable heartbeat and produces its own red blood cells. After about eight weeks, the developing embryo enters the fetal period in which it remains until birth. It is at this time that organs develop. The **fetus** is definitely human in form.

Most prenatal influences on our development are genetic; however, environment can also have an influence. Certain chemicals called **teratogens** can be harmful if they enter the mother's body and are passed through the placenta to the fetus. The fetus receives nutrients and oxygen from the placenta. The placenta also screens out toxins, viruses, and drugs, but it is not perfect. The ones that are not screened out include radiation, toxic chemicals, nicotine, and alcohol, as well as viruses like German measles and those associated with sexually transmitted diseases.

Nicotine can cause premature birth, an abnormal heartbeat, and miscarriage. The effects of alcohol are more dramatic. Children of alcoholic mothers who drink during pregnancy are at high risk for **alcohol related neurodevelopmental disorder** or **fetal alcohol syndrome** (FAS). Children born with either of these have physical and mental abnormalities. A less severe effect of moderate drinking during pregnancy is called **fetal alcohol effect** (FAE). These children may have learning disabilities or behavioural problems. Psychoactive drugs like cocaine and heroin can cause newborns to share their mother's physical drug addiction. The serious withdrawal symptoms associated with these addictions can kill an infant.

As frightening as teratogens are, most fetuses do survive their nine months and enter the world as healthy newborns.

Newborn

Newborns come into the world equipped with pre-wired motor programs that help them adapt. These programs are called **reflexes**. All babies are born with a set of specific reflexes that are inborn and automatic responses to certain specific stimuli. These reflexes are survival behaviours. The following are some of the important reflexes with which humans are born:

- **Rooting reflex:** When you touch a baby on the cheek, the baby will turn his or her head to the side where he or she felt the touch and seek to put the object into his or her mouth. This reflex helps them find the breast or bottle that supplies nourishment.

- **Sucking reflex:** When you put an object in a baby's mouth, the baby will suck on it.

- **Gag reflex:** This reflex is a vomiting-like reaction that occurs automatically when a substance threatens to go down the windpipe, into the lungs, instead of down the esophagus, into the stomach.

- **Grasping reflex:** If an object is placed into a baby's palm or foot pad, the baby will try to grasp the object with his or her fingers or toes.
- **Moro reflex:** When a baby is startled, they will fling their limbs out and then quickly retract them making themselves as small as possible.
- **Babinski reflex:** When a baby's foot is stroked, he or she will spread their toes.

These are the reflexes that we are born with and lose later in life when our brain grows and develops.

In the first few hours of life, a newborn's temperament can be seen. **Temperament** is emotional excitability. "Easy" babies display predictable sleeping and eating patterns, appear relaxed, and are cheerful. "Difficult" babies are unpredictable, intense, and irritable. Temperament is a relatively stable personality trait.

Physical Development in Infancy and Childhood

Developing Brain and Motor Development

Infancy is the first year of a child's life. From one to three years of age, a child is a **toddler**. **Childhood** includes the time between the toddler years and the teenage years.

During prenatal development, the body creates nerve cells; however, the nervous system is still very immature. At this point, walking, talking, and remembering are not possible. The brain has not yet developed any neural networks. These develop as a result of **maturation**. This is the biological growth process that is programmed into genes and that leads to organized predictable changes in behaviour. In other words, behaviours such as rolling over, then crawling, then walking, and then running. No amount of experience will change this predetermined blueprint.

Research has shown that experience can impact development. Parents who talk and read to their children foster neural connections that help reading skills develop. The child's brain creates the readiness for crawling and walking. The same occurs for all physical skills including bladder and bowel control. It is safe to say that, excluding any developmental difficulties, all humans develop the same basic motor skills in the same sequence, although the age at which they develop may differ from person to person.

Cognitive Development in Infancy and Childhood

Parents devote a lot of time to the intellectual development of their children. Developmental psychologists try to describe how children think and evaluate the world. Few people have had a greater influence on this research subject than Jean Piaget. He worked on intelligence tests and tried to determine the age at which children were likely to answer questions correctly. What fascinated Piaget were the incorrect answers. He found that children at a given age were making similar mistakes. This led to his **theory of cognitive development**. He did not perform experiments in the traditional sense, with control groups. Instead, he used a clinical method where he had conversations with children in an attempt to understand their mental world.

Piaget's Cognitive Stages

Piaget believed that the way children think and solve problems depends on their state of cognitive development. **Cognition** is defined as all the mental activities that are associated with thinking, knowing, and remembering. Children think differently. He believed that humans adapt to a changing environment by creating **schemas**. These are the frameworks that we use to organize and interpret information. Think of them as scripts—a helpful mental plan. Piaget believed that we develop these plans by using two different experiences: assimilation and accommodation.

- **Assimilation** is when you interpret your new experiences in terms of your existing schemas.
- **Accommodation** is when you adapt your current schemas to incorporate new information.

Children assimilate and accommodate all the time. This is how they plan and organize new information.

For example:

Schema: Dogs are four-legged animals.

Scenario: Child sees a cat.

If the child assimilates, then they think that the cat is a dog.

If the child accommodates, then they change their schema to include both dogs and cats as having four legs.

Learning Activity 3.1: Cognitive Development

Given the schema and the scenario, predict how information may be interpreted using assimilation and accommodation.

Schema: Everything with wheels is a truck.

Scenario: Child is presented with a bicycle.

If he assimilates, _____
_____
_____
_____
_____
_____

If he accommodates, _____
_____
_____
_____
_____
_____

Schema: Grade 9 kids don't take their school work seriously.

Scenario: A grade 9 student gives a great presentation about World War II at the Remembrance Day ceremony.

If you assimilate, _____
_____
_____
_____
_____
_____

If you accommodate, _____
_____
_____
_____
_____
_____

continued

Schema: My parents don't know what it is like to be a teenager.

Scenario: Your grandmother tells you a story about your mother's rebellious teenage years.

If you assimilate, _____
_____
_____
_____
_____
_____

If you accommodate, _____
_____
_____
_____
_____
_____

Schema: I can't relate to people of different races or ethnicities because we are so different.

Scenario: The new student in your class is of a different race and you find out that you have a lot more in common than you have differences.

If you assimilate, _____
_____
_____
_____
_____
_____

If you accommodate, _____
_____
_____
_____
_____
_____

Check the answer key.

Cognitive Development in Infancy and Childhood (continued)

According to Piaget we all pass through four separate stages of cognitive development on our journey from childhood to adulthood. Let's look at each of these four stages separately.

Sensorimotor Stage (from birth to about age two)

During this stage, you learn about the world by mouthing, grasping, looking, hearing, and touching. You focus on things that you perceive through your senses. This is your first cognitive schema.

Piaget found that, at this stage, infants act as though a hidden object ceases to exist. For them out of sight is not only out of mind, it is also out of existence. If you put a toy under a blanket, the toy doesn't exist anymore. He called this concept **object permanence**. It is defined as the awareness that things continue to exist even when you can't see or hear them. This is a sensorimotor milestone because it is evidence of a working memory. By the time babies are about one year old, they look for hidden objects. The baby now has a mental representation of the object—a **mental schema**. They now have object permanence and are ready to move to the next stage—the preoperational stage.

The following is a list of concepts or characteristics attributed to this stage.

- The child acts on the environment by knocking down blocks, making sounds, and finding toes.
- The child sees an object and reaches for it.
- The child realizes that an object still exists although the object is no longer seen.
- The child cries when the parent is no longer present.

Preoperational Stage (from age two to about age seven)

This is the time when children use language even though they are unable to think logically. They start to use symbols, they start speaking their first words, and they gradually learn to represent the world more completely through the use of language.

At this stage, because children can't think logically, they lack **conservation**. This is an understanding that properties such as mass and volume remain the same even if you change an object's form. Piaget is famous for his demonstrations with children of this age group.

- One of the classic conservation experiments involved **conservation of liquid quantity**. A child is first shown two short, fat beakers. They are then filled with coloured water as the child watches. The child is asked to say when the two beakers have the same amount of water in them. If necessary, the experimenter pours a bit of liquid from one to the other until the child agrees that the level of coloured water is the same in both beakers. Next, the adult takes a tall, thin beaker and pours coloured water from one of the short, fat beakers into it. The child is asked to compare the tall, thin beaker to the short, fat one and to determine which one has the most water. Most children under the age of six will point to the tall beaker. The child is swayed by the perceptual cue of height.

- In his classic experiment on **conservation of mass**, a bit of clay is rolled into a ball. A second ball of clay, the same size, is shown to the child, who agrees that they are equal. One of the balls is then rolled between the palms of the adult's hand, forming a sausage shape. The child is asked which piece of clay has more clay in it. The child typically points to the sausage shape, which is longer, and claims that it has more clay.

- **Conservation of area** is tested by asking the child whether more ground is covered by the blocks that are spread out or the blocks that are close together. Non-conserving children tend to assume the blocks cover more area when spread out.

- **Conservation of number** is tested by placing coins on a table. Seven or eight coins are placed in a row, and a matching number of coins are placed directly below the first one. Next the experimenter spreads out one of the rows so the coins are farther apart. The child is asked whether the two rows of coins still have the same number of coins in them. Typically, if the child still can't count, they will claim that the spread out row has more coins in it.

Preoperational children develop language skills; however, their communication is often **egocentric**. This means that they are unable to take the point of view of another person. They say what is on their mind without taking into account what others have said.

The following is a list of concepts or characteristics for this stage.

- The child starts to represent the world internally through language.
- The child cannot take another point of view.
- The child thinks all objects have life.
- The child thinks human beings created everything.
- The child uses inaccurate logic by assuming that the characteristics of a specific idea can be applied to a similar idea. Birds fly and airplanes fly; therefore, birds must be airplanes.
- The child classifies objects by only one trait, typically colour.

Concrete Operational Stage (from age eight to about age twelve)

Once the child catches on to the conservation experiments, they transition to a new stage of development: the concrete operational stage. At this stage, the child can understand simple operations performed on concrete reality. The child can understand because they have a schema or mental representation for quantity, mass, volume, and number. They understand that change in shape does not affect quantity. They can comprehend mathematical transformations and enjoy math jokes. A child was labelled a conserver when, according to Piaget, the child could explain the conservation experiment by either using reversibility (it can be put back like it was), compensation (it's taller, but it's skinnier), or identity (you didn't change it, it's still the same).

The following is a list of concepts or characteristics for this stage.

- The child begins to understand that objects can change shape without other changes in their characteristics.
- The child understands and performs operations that go in the other direction.
- The child draws conclusions from a number of specific facts.
- The child classifies objects into larger classes of objects.
- The child classifies by a number of characteristics.

Formal Operational Stage: from age twelve and up

Around the age of twelve, children enter a new, higher stage of cognition. The adolescent's mind becomes able to manipulate complex mental representation. They begin to think in terms of **abstractions** by using ideas instead of just concrete objects. They are able to reason hypothetically. Formal operational thinkers can play complicated board games (for instance, Monopoly and chess) and do geometry and algebra. This stage is adult reasoning. In this stage, we gain the ability to think about the way we think. This is called **metacognition**. We can trace our thought processes and evaluate the effectiveness of how we solved a problem.

The following is a list of concepts or characteristics for this stage.

- The child thinks abstractly.
- The child hypothesizes.
- The child can get specific facts from a generalization.

Assessing Piaget

While many developmental psychologists value Piaget's contributions about the order in which our cognitive skills develop, most agree that he underestimated children. They criticize the work because many now believe that development is continuous, rather than divided into separate stages. They also believe that some children go through the identified stages more rapidly than Piaget estimated.

Nevertheless, Piaget's identification of cognitive milestones broke new ground.

- He taught us that we learn best when we build on what we already know.
- He showed us that new reasoning abilities require the stepping stones of previous abilities.
- He taught us that children can't reason with adult logic.
- He provided us with a base on which to build our understanding of cognitive development.

Learning Activity 3.2: Piaget's Theory

For each of the situations below, using Piaget's theory, indicate the stage, the age, and the concept that is described.

1. Jake looks at a string of plastic beads: six are white and ten are blue. Jake is asked how many white beads there are and answers correctly—six. He is then asked how many plastic beads there are and answers ten.

   Stage: _____

   Age: _____

   Concept: _____
   _____

2. Carrie can solve an algebraic equation.

   Stage: _____

   Age: _____

   Concept: _____
   _____

3. Pierre loves to play peek-a-boo. He laughs when someone puts a blanket over his face and then pulls it away.

   Stage: _____

   Age: _____

   Concept: _____
   _____

4. Paolo sees a piece of ribbon tied in a bow. He unties the bow and stretches the ribbon to its full length. His mother asks him which is longer: the ribbon in the bow or the ribbon stretched out. He answers that they are the same.

   Stage: _____

   Age: _____

   Concept: _____
   _____

Check the answer key.

Social Development in Infancy and Childhood

Attachment

By the age of one, an infant is an active explorer of the world. **Attachment** is the intense relationship to one person, typically the mother. The security of the attachment to the primary caregiver helps the infant gain confidence and the willingness to explore the environment. There are three elements that contribute to the infant-parent bond that forms during attachment. They are body contact, familiarity, and responsiveness.

Body Contact

Harry Harlow, a psychologist, researched the relationship between body contact and nourishment using infant monkeys and artificial mothers. He was looking for the answer to whether or not infants are more attached to the person who nourishes them or to the person who provides body contact.

His infant monkeys could choose between two artificial mothers. One was foam rubber covered with soft terry cloth and the other was a bare-wire cylinder. If both mothers had a bottle for feeding, the infants preferred the soft, cuddly mother. Even if the soft, cuddly mother had no feeding bottle attached, the infant monkeys still chose her over the other.

| Figure 3.1 | ***Harlow's Studies of Attachment*** |

Photo Credit: (left) Martin Rogers/Woodfin Camp and Assoc., (right) Martin Rogers/Stone

Figure 3.1: Baron, Robert A., Bruce Earhard, and Marcia Ozier. Psychology. 3rd Canadian ed. Toronto, ON: Pearson Education Canada, Allyn and Bacon, 2001. 337.

Familiarity

Another element is familiarity. For some species, the attachment bond forms during a **critical period**. This time period occurs shortly after birth. Konrad Lorenz, a behaviourist, found that a newborn duckling will follow the first moving object that it sees. This is known as **imprinting**. Human infants do not have a similar critical period for attachment.

Responsiveness

The third element is responsiveness. Responsive parents are very aware of what their children are doing and they respond appropriately. Unresponsive parents often ignore their babies, helping them only when they feel like it. An infant who seems to be secure and confident, not overly shy or anxious, is referred to as being securely attached.

For many years, psychologist Mary Ainsworth studied attachment between infants and mothers. She distinguished between secure attachments, avoidant attachments, and anxious attachments. Her research involved observing infants' reactions when placed into a strange, novel situation when their parents left them alone for a short period of time and then returned.

- **Secure attachments:** These infants usually appear active and happy. They are willing to explore a new room if the mother is present. They warm up quickly to a stranger who talks with the mother first. They are not greatly disturbed if the mother is briefly absent from the room. When all the adults leave and the infant is alone in the room, the securely attached infant becomes anxious and runs to the mother's side when she reappears.

- **Avoidant attachments:** These infants are not even upset by separation from the mother. They do not cry when she leaves. When she returns, the infant may ignore her or react casually to her presence. The infant may even avoid her. If the infant is distressed they will not seek contact.

- **Anxious attachments:** These infants do not explore a strange room full of toys. They cry and cling to the mother even before being separated from her. They act suspicious of strangers and get very upset if the mother leaves the room. When she returns, they may pout or continue crying. They show extreme stress when the mother leaves, but they resist being comforted by her when she returns.

Securely attached infants have a good relationship with the mother. This makes them feel confident and able to explore new environments without anxiety. They value the mother as a source of security and miss her when she is gone.

The avoidant infants gain no feelings of security from the mother and would rather avoid her.

The anxiously attached infants seem fearful and anxious. They feel more secure with the mother present. Thus, when she leaves, they feel resentful and although they run to her when she returns they continue to show their distress instead of showing happiness about seeing her again.

Parenting Patterns

Diana Baumrind researched parenting styles. She found three distinct strategies of discipline. The three styles that she identified are called authoritarian parenting, permissive parenting, and authoritative parenting.

- **Authoritarian parenting:** In this style, parents demand unquestioning obedience. They do not feel explanations to children are required. They often believe harsh punishment is the cure for misbehaviour. Parents make all of the decisions and children have little input in decision making by the family. Parents are typically not very affectionate and seldom praise their children.

- **Permissive parenting:** In this style, parents allow children to do almost anything. Punishment is rare or inconsistent. Children are given much the same decision-making power as adults, but little of the responsibility. The children simply do as they please.

- **Authoritative parenting:** In this style, parents exert control by setting rules and enforcing them. They explain the reasons behind the rules. They communicate with their children. There is a lot of talking and negotiating. Research indicates that authoritative parents often produce children high in self-esteem, self-reliance, and social competence. This means that they are usually more successful, happy, and generous with others. This may be due to the fact that these parents allow their children to develop a sense of control over their lives, making them more motivated and self-confident.

Assignment 3.1: Parenting Patterns (12 marks)

For each of the scenarios below, indicate how an authoritarian parent, a permissive parent, and an authoritative parent might respond.

1. Your seven-year-old daughter wants to sleep over at her friend's house with three other girls. You have met the one friend. However, you have not met her parents.

   Authoritarian response: _____
   _____
   _____
   _____

   Permissive response: _____
   _____
   _____
   _____

   Authoritative response: _____
   _____
   _____
   _____

2. You decide to run away from home. You are caught just as you are heading out the door.

   Authoritarian response: _____
   _____
   _____
   _____

   Permissive response: _____
   _____
   _____
   _____

   Authoritative response: _____
   _____
   _____
   _____

Assignment 3.1: Parenting Patterns (continued)

3. Your four-year-old has coloured on the wall for the first time.

   Authoritarian response: _____
   _____
   _____
   _____

   Permissive response: _____
   _____
   _____
   _____

   Authoritative response: _____
   _____
   _____
   _____

4. You have missed your curfew by thirty minutes.

   Authoritarian response: _____
   _____
   _____
   _____

   Permissive response: _____
   _____
   _____
   _____

   Authoritative response: _____
   _____
   _____
   _____

Three Developmental Issues

There are three major issues in the study of developmental psychology. They are continuity and stages, stability and change, and nature and nurture.

Continuity and Stages

Question: How is our development continuous and how do we develop in stages?

In some areas, such as attachment, development is a continuous process. Cognitive development is also more continuous rather than divided into stages. In motor development, we clearly pass through stages.

Stability and Change

Question: What remains stable across our development and how do we change?

Our temperament is relatively stable throughout the lifespan.

Nature and Nurture

Question: How does the interaction of nature and nurture affect development?

The interaction of both heredity and environment shapes a child's development. In the area of physical development, environmental factors combine with a child's genetic tendencies to shape the fetus until the moment of birth. These factors include the use of nicotine and alcohol.

In the area of cognitive development, children learn new behaviours based not only on developmental readiness, but also on whether or not they are raised in a stimulating environment.

In the area of social development, children's interactions are influenced by both their inborn temperament and the supportive or neglectful environments in which they are raised.

Lesson Summary

In this lesson, the beginnings of life from zygote to embryo to fetus were examined. The physical, cognitive, and social development in infancy and childhood were outlined. Three key developmental issues were discussed and the research to support each one was presented.

L E S S O N   2 :   A D O L E S C E N C E

Lesson Introduction

In this lesson, the period of development called adolescence will be examined. The physical changes that occur as well as the cognitive and the social development will be presented. In particular, the theories of Lawrence Kohlberg on moral development and Erik Erikson on psychosocial development will be explained. Once again, the three key issues in developmental psychology will be examined.

What is Adolescence?

Adolescence is the transition period from childhood to adulthood. It extends from puberty to independence. When we are in adolescence, we are referred to as adolescents.

However, the period of adolescence is changing. Physical maturity is happening at an earlier age. Conversely, marriage, financial independence, and the end of formal education are happening later in life.

For the majority of teenagers, the experience of adolescence is an exciting opportunity to explore the possibilities of adult life, even though the changes that occur during this period are probably the most dramatic changes that they will ever experience. Let's look at the physical, cognitive, and social changes that occur.

Physical Development in Adolescence

The biological or physical changes of adolescence are triggered by sex hormones. This period of sexual maturation is called **puberty**. It is the time when one matures sexually. The sex hormones lead to physical and emotional changes. It usually begins with a growth spurt at about eleven years of age for girls and at about thirteen years of age for boys. It is during this growth spurt that primary and secondary sex characteristics develop.

The **primary sex characteristics** are the reproductive organs—the testes in males and the ovaries in females. The **secondary sex characteristics** include the appearance of body hair, breast development in females, muscle development in males, and enlargement of the voice box producing a deeper voice in males.

Two of the more obvious events of puberty are the beginning of menstruation for females and the beginning of ejaculation for males.

Cognitive Development in Adolescence

Reasoning

By the time adolescence begins, a person is approaching Piaget's formal operational stage. If you remember from the last lesson, this is when one develops adult thinking and reasoning. Things like formal logic, abstract thinking, and hypothetical reasoning are now possible.

Morality

Another important aspect of cognitive development is **morality**. This is a person's sense of right and wrong. Lawrence Kohlberg developed a theory of moral reasoning that demonstrates how our way of thinking about moral situations changes with our level of development.

Kohlberg did this by posing moral dilemma questions to participants in his experiments. The most famous dilemma involved a man named Heinz who stole money to pay for a medication for his dying wife because he couldn't afford the medication himself and couldn't find anyone to loan him the money. Based on the answers that he received, he organized moral development into three levels.

The focus of the first level is concern with self, the second level is concern with fitting in, and the third level is concern with ethical principles. He called the stages preconventional, conventional, and postconventional moral reasoning. Each of the levels is further broken down into stages.

Preconventional Moral Reasoning

Most children under the age of nine are at this stage; however, some adults never get past this stage. This level is characterized by a desire to avoid punishment or gain reward. The reasoning is limited to how the choice affects them.

Examples of responses to the Heinz dilemma might include that Heinz was wrong to steal the drug because he might get caught and put in jail or that Heinz was right to steal the drug because he will have his wife in his life longer.

Stage 1: Preconventional

Moral decisions are based on the consequences of the action. (Will I be punished?)

Stage 2: Preconventional

Moral decisions are made based on the benefits gained from the action. (Will I get what I want?) The decision is made on the principle of reciprocity. (Does the victim deserve it?)

Conventional Moral Reasoning

This type of reasoning is typical of most adults. It generally appears when Piaget's formal operational stage occurs. At this level, there is a move past personal gain or loss to a look through the eyes of others. There is a strong desire to follow the rules and laws of society.

Examples of responses to the Heinz dilemma might include that Heinz was wrong to steal because he was breaking the law, or Heinz was right to steal because he had to protect a family member.

Stage 3: Conventional

Moral decisions are determined by evaluating the action in terms of love and approval of family and friends. (Will my family or friends get mad at me?)

Stage 4: Conventional

Moral decisions are based on law or religion. (Is it right according to the law?)

Postconventional Moral Reasoning

Most people may not even reach this final level. At this level, universal ethical principles that represent the rights or obligations of all people come into play. An example of a universal principle is a personal conviction to uphold justice.

Examples of responses might include that Heinz was right because everyone has a right to live and he was simply helping his wife, or Heinz was wrong because everyone must respect the property of others.

Stage 5: Postconventional

Moral decisions are based on fairness, justice, and truth. (Is there a higher good that can come from my action?)

Criticisms of Kohlberg's Work

Although Kohlberg's theory has had an influence on our understanding of moral development, there have been some psychologists who don't support his ideas. Two of the major criticisms of Kohlberg's work are as follows:

1. His theory is about moral judgment, not moral behaviour.
2. His research was conducted on males, not females.

Carol Gilligan argues that there is a fundamental difference in the way men and women view moral behaviour. Men view it in terms of justice and fairness while women view it in terms of responsibility to individuals and sacrifice.
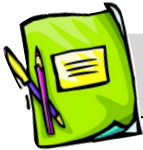
Learning Activity 3.3: Kohlberg's Theory

For each situation below, decide in which stage of Kohlberg's theory the person is responding. Explain your reasoning.

1. Tamara has five tests in one day. She is a good student but she didn't have time to study for her French test. The girl that sits next to her is also a good student. That girl has copied from Tamara on numerous occasions. Tamara decides to copy from her. Regardless, she thinks that she should never have had five tests in one day.

   _____
   _____
   _____
   _____
   _____

2. Scott thought about leaving school early and going to a basketball game. He stayed in school because he was afraid of getting caught.

   _____
   _____
   _____
   _____
   _____

continued

Learning Activity 3.3: Kohlberg's Theory (continued)

3. Juanita's friends were at the mall and someone suggested that they do a little shoplifting just to see what they could get away with. Juanita wouldn't participate and said stealing was wrong.

_____
_____
_____
_____
_____

4. Muhammad lives with his mother who is very ill and needs to get to the hospital. He steals a car in order to get her to the hospital.

_____
_____
_____
_____
_____

5. Martina lives in a war-torn region of the world. She distributes food to orphans living in the streets, but does so in secret because this activity is against the law in this part of the world.

_____
_____
_____
_____
_____

6. Grant wants to spend time after school volunteering at the hospital. He is a good volleyball player. Sometimes though, practice interferes with volunteering. The coach and his teammates pressure him to play. He decides to play with the team instead of volunteering.

_____
_____
_____
_____
_____

Check the answer key.

Social Development in Adolescence

Social development looks at all social interactions, friendships, and relationships. Erik Erikson created an eight-stage theory of social development that covers the entire lifespan from infancy to late adulthood. Each stage has its own task or conflict. If the person successfully solves the crisis and completes the developmental task, then they move on to the next stage with little stress.

Erikson's Stages of Psychosocial Development

Approximate age of stage	Issue or conflict	Description
Infancy Birth to age 1	Trust versus mistrust	Babies' first experience of the world centres on need fulfillment. They learn whether or not they can trust that the world provides for their needs. If the needs are dependably met, they develop a sense of basic trust.
Toddlerhood Ages 1 to 2	Autonomy versus shame and doubt	Toddlers begin to exert their will over their own bodies for the first time. Autonomy is our control over our own body and toilet training is an early effort at gaining this control. Toddlers should also learn to control temper tantrums during this stage. It is at this stage that they learn to do things for themselves or they still doubt their abilities. Their favourite word is "no".
Preschooler Ages 3 to 5	Initiative versus guilt	Their favourite word changes from "no" to "why". If we trust those around us and feel in control of our bodies, we feel a natural curiosity about our surroundings. Children at this stage want to understand the world. They take this initiative in problem solving. If this doesn't happen, they feel guilty about being independent.
Elementary School Age 6 to puberty	Competence versus inferiority	This stage is the beginning of school education. It is the first time children are expected to produce work that is evaluated. If they produce as well as their peers, they develop a feeling of competence. If not, they may develop an inferiority complex and feel anxious about performing well.

Approximate age of stage	Issue or conflict	Description
Adolescence puberty to early 20s	Identity versus role confusion	This stage occurs during adolescence when social identity is developed. Different roles are tried out to see which one is best suited. A stable sense of self at this time will prevent an identity crisis later in life.
Young adulthood 20s to 40s	Intimacy versus isolation	Young adults that have stable identities now must figure out how to balance their ties and effort between work and relationships. Without this balance they will feel socially isolated.
Middle adulthood 40s to 60s	Generativity versus stagnation	This is when we begin to look critically at our life path. We want to make sure that we are creating the type of life that we want for ourselves and our family. If not, then we may try to change our identities or control those around us to change our lives.
Late adulthood 60s and up	Integrity versus despair	Toward the end of life we look back at our accomplishments and decide if we are satisfied with them. If we feel regret over how we lived our lives, we may fall into despair over lost opportunities.

Developing Identity

It is during adolescence that we develop a strong, consistent sense of whom and what we are. This is our **identity**. The search for identity has many characteristics.

- **Experimentation:** This is when adolescents explore healthy and less healthy options. They look at career opportunities, observe role models, and sort out what is appealing and what is not appealing. Some get involved in drug use or promiscuous sexual behaviour.

- **Rebellion:** The search for identity may involve testing the limits that are set by the adults in our life. This drive for independence becomes unhealthy when it involves criminal or self-destructive behaviour. Healthy adolescents gain independence in ways that don't harm themselves or others.

- **Selfishness:** Adolescents move in and out of a variety of friendships. While they are genuine and important, they tend to be temporary.

During this fifth stage of development, adolescents are trying to define themselves within their world and want to feel as though they belong in certain groups, yet they want to see themselves as unique and different from the group. The person who has solved the identity crisis has developed values and is true to those values.

It is during adolescence that teens try on new roles, make decisions too soon, and fall in love. Erikson believes that teens can't make these decisions wisely and can't really be in love until their identities are clear.

He believes that there are certain tasks that need to be completed first. Tasks such as accepting the physical changes that puberty brings, relying more on peers, moving away from parents for social and emotional support, establishing dating relationships, and making decisions related to career goals.

Although many adolescents feel they have established their identities by the end of high school, their identity is put to the test upon completion of high school when they go to college, to university, or to the workplace and form new friendships. These events once again challenge adolescents' views of themselves. The formation of self-concept and self-esteem are the markers of the transition to adulthood.
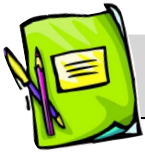
Learning Activity 3.4: Erikson's Social Development Theory

Based on Erikson's views on adolescence, answer the following questions.

1. What are three characteristics of establishing an identity?

    _____
    _____
    _____
    _____
    _____

2. What does it mean to have an identity?

    _____
    _____
    _____
    _____
    _____

Learning Activity 3.4: Erikson's Social Development Theory (continued)

3. What situation creates identity confusion?

_____
_____
_____
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_____

4. How do adolescents try to solve their identity confusion?

_____
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_____

5. What tasks should adolescents complete in order to establish their identities?

_____
_____
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6. What are some of the identity tests that adolescents face as they near completion of the stage?

_____
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Check the answer key.

Three Key Developmental Issues

Let's look at the three key developmental issues that were presented in the last lesson and see what support was gained for each of them during the period of adolescence.

- **Continuity and Stages**

  Question: How is our development continuous and how do we develop in stages?

  Piaget identified stages or jumps of cognitive development, while Kohlberg was concerned with changes in moral development and Erikson examined transitions in social development. This supports stage theories but this is also a time when we gradually evolve into a more developed version of ourselves.

- **Stability and Change**

  Question: What remains stable across our development and how do we change?

  The period of adolescence is affected by both stability and change. Temperament and values are most likely to stay constant while relationships and certain behaviours are more likely to change.

- **Nature and Nurture**

  Question: How does the interaction of nature and nurture affect development?

  Support for the role of nature is evident in the genetically determined sequence of changes that spark sexual feelings and interests. The role of nurture is supported by research with family, friends, and society.

Lesson Summary

Adolescence is the transition period between childhood and adulthood. It is marked with significant changes in the following areas:

- **physical development:** puberty, growth spurts, primary sex characteristics, secondary sex characteristics, menstruation, and ejaculation
- **cognitive development:** abstract thinking, formal logic, hypothetical reasoning, and moral development
- **social development:** a sense of identity and close relationship building, and a time to build independence

Developmental psychologists explore these three key issues as they do research on this period in the lifespan.

Lesson 3: Adulthood and Aging

Lesson Introduction

This lesson will focus on the period of adulthood and all the changes that occur physically, cognitively, and socially. The lesson ends with a discussion of the grieving process and the stages of dealing with the death of the terminally ill.

Early Adulthood Transition and the Social Clock

As we continue on our journey from adolescence to adulthood, we are faced with many decisions that are influenced by what psychologists call the **social clock**. This is defined as the culturally preferred timing of social events such as marriage, parenthood, and retirement. Social clocks have different settings in different cultures.

For example, seventy-year-olds are going back to university in developed countries and very young girls are encouraged to marry in underdeveloped countries.

There is a new developmental stage called **emerging adulthood** that is receiving a lot of focus in the literature. It came about because developmental psychologists have noticed that adolescents are easing slowly into the self-sufficiency of adulthood. This transition period is stretched out by changing careers, moving across the country, relying on parents for financial help, and continuing to receive more formal education.

Physical Changes and Transitions

Middle Adulthood's Physical Changes

Middle adulthood is from around thirty-five to sixty-four. It is a time of more physical changes. The most noticeable sign of aging in women is **menopause**. This is when the menstrual cycle ends, usually between the ages of forty-five and fifty-five. There is a decrease in the hormone estrogen which in some women can cause hot flashes.

There is no male reproductive event that is equal to menopause. Men's testosterone level drops, but not significantly. Sperm count also decreases but this does not affect fertility.

Later Adulthood's Physical Changes

Once we hit later adulthood, after the age of sixty-five, our ability to see, smell, and hear declines. Muscle strength and stamina also decreases and our bodies take longer to heal from injury or trauma.

Aging slows down travel on our neural pathways. Older people need more time to react, remember names, and solve puzzles because portions of the brain have started to waste away. Cell loss in the memory regions of the brain is evident. This is why it is extremely important to remain physically and mentally active.

Diseases Related to Aging

Two diseases related to aging are Alzheimer's disease and senile dementia.

- **Alzheimer's disease:** This is a brain disorder that is characterized by irreversible destruction of brain cells that just continues to worsen. It results in deterioration of memory, reasoning, language, and physical functioning. There is a decrease in acetylcholine which leads to impaired thinking and memory.
- **Senile dementia:** This is a substantial loss of brain cells caused by alcoholism, tumours, or strokes.

Not every adult who forgets something or loses something has Alzheimer's or dementia. Memory loss is a normal part of the aging process.

Cognitive Changes and Transitions

Memory

Some types of memory decrease with age, while others seem to remain the same. Research has shown that our ability to recall information or events decreases in late adulthood. However, our ability to recognize materials seems to remain stable. Older adults also seem to have trouble remembering tasks that are based on habit or time even though they can remember information that is meaningful to them.

Intelligence

The same thing goes for intelligence. Intelligence decreases in some areas and actually increases in other areas. Two different types of intelligence have been identified. They are called fluid intelligence and crystallized intelligence.

- **Fluid intelligence** is our ability to reason swiftly and abstractly. This is what is involved in solving logic puzzles or doing number puzzles (for example, Sudoku puzzles). It decreases with age.
- **Crystallized intelligence** is the knowledge that we have accumulated over the years. It includes our verbal abilities and tends to increase as we get older.

Social Changes and Transitions

In addition to physical and cognitive changes during this period of our life, there are many social changes that are related to life events that occur at this time. If you remember Erikson's stages of psychosocial development, we are talking about generativity (being productive) and intimacy (forming close relationships).

The two life events that affect us most at this time are work and love. The work experience, including the challenges and the accomplishments, gives us satisfaction. Love gives the most satisfaction when the partners share intimate information and emotionally support each other.

Most people in late adulthood are very happy and satisfied with their lives. They have resolved their issues with work and love. Their regrets focus on things that they wanted to do but that they didn't get around to doing.

Death and Dying

Before the 1970s, there was little discussion on the topic of death and dying until a psychologist by the name of Elizabeth Kubler-Ross published a book on this topic. She worked with the terminally ill and her book dealt with how to get closer to those that are dying.

She identified five stages in the attitudes of the terminally ill patient. The stages are denial, anger, bargaining, depression, and acceptance.

- **Denial:** Denial is a common reaction when people are told that they have a terminal illness. It is a natural defence against the shock of the approaching death.
- **Anger:** Anger emerges at irregular times and is often directed against people who have nothing to do with the situation. It is a difficult stage for relatives, the doctor, and the patient.
- **Bargaining:** Many patients believe that they can strike some kind of bargain to postpone death. It may involve good behaviour or setting deadlines.

- **Depression:** Depression occurs when the terminally ill patient can no longer deny this illness. The patient feels hopeless and the impending loss of life becomes overwhelming.
- **Acceptance:** This is the final stage. It is a time when the patient has come to terms with the impending death.

Other psychologists have identified stages in the mourning process as well.

- There is initial shock after an unexpected death.
- It is followed by a period of intense sadness when the grieving person may withdraw from social contact.
- This is followed by anger. The grieving person seems to protest the unexpected death.
- Finally, the grief is resolved and the person returns to normal.

Some researchers believe that in the normal mourning process, immediately after the death, the survivors experience a wish to do something for the sake of the deceased person. The mourners then turn away from all reminders of death. They may feel numb in all emotions. After regaining their emotional equilibrium, they typically engage in a review of their life with the deceased. Sadness and memories may make it hard to concentrate on anything else. Feelings of intense grief fade with time.

Not everyone reacts to the death of loved one in the same way. Belief systems pertaining to death may play a role in adjustment. The sudden loss of a child or spouse seems to produce a more prolonged and disturbing grief.

Critics of the stage theories believe that the stages are not predictable and are too simplistic as everyone deals with loss in their own way and at their own pace.

Lesson Summary

The focus of this lesson was on adulthood and the aging process. The social clock or the "right time" for social events such as leaving home, getting married, having children, or retiring varies from culture to culture. Physical changes, namely menopause, occur during this time in the lifespan. At this time, our sense of sight, smell, and hearing begin to decline. As well as physical changes, there are also changes in cognitive skills, namely memory and intelligence. Socially, work and love are the two events that are most affected during this time. The lesson ended with a discussion on how we cope with our own death and the death of loved ones.

Assignment 3.2: Development throughout the Life Cycle (12 marks)

In this module, you are learning about how people develop throughout their lifetimes: physically, cognitively, socially, and morally. For this assignment, you will use your understanding of development to create journal entries (or diary entries) from the perspective of a person at different stages in his or her life.

Choose three stages of development from the list below.

- Infancy and toddlerhood: birth to age 2
- Early childhood: ages 2 to 6
- Middle childhood: ages 6 to 12
- Adolescence: ages 12 to 18
- Young adulthood: ages 18 to 40
- Middle adulthood: ages 40 to 65
- Late adulthood: age 65 and up

Step 1

Write three journal entries (one for each stage that you chose). Each entry should address two of the four different aspects of development: physical, social, cognitive, and moral. Your entries should be written from the perspective of someone who does NOT know about psychology and should include that person's thoughts and descriptions of their life. It is like a diary entry. *(2 marks for each journal entry)*

Step 2

Write a summary of the two developmental stages that you selected (physical, cognitive, social, and moral) and that are illustrated by the entry. This is the part where you can use the psychological terms. *(2 marks for each summary)*

Sample journal entry and analysis

Please note the following example uses all four stages of development to assist with this assignment. However, your journal entry will only cover two stages of development.

continued

Assignment 3.2: Development throughout the Life Cycle (continued)

Step 1: Journal entry

It was morning when my neighbour and I watched my fifteen-month-old daughter pick up all the toys that were in her crib and put each and every one in her mouth. She looked around the room taking in all the sights around her. It was interesting to watch her look for her rattle, even when it fell under the blanket. She became very excited when she was able to find the rattle again. Her face was full of smiles and, by hanging onto the railing in her crib, she jumped up and down. When she got tired of playing by herself, she started to cry and reach out with her arms. As soon as I picked her up, she stopped crying. Once I took her out of the crib and placed her on the floor, she immediately crawled over to plants in the window. She was about the pull the leaves off the plant but she looked at me first. It seems that every day she tests me to see how I will react if she does this and, every day, the pattern is repeated with me telling her not to touch it and redirecting her to another activity.

Step 2: Analysis of the development stages: social, moral, cognitive, and physical

Cognitively, the child is in the sensorimotor stage because she was experiencing the world through her senses. For example, she was constantly picking up any object within reach and often putting it in her mouth. She was probably in the later sensorimotor stage as she understood object permanence. (She found the rattle when it was hidden under a blanket.) **Physically**, the child is learning to control her own body and she communicates with her body by reaching and pointing. **Socially**, she is learning that she can do things on her own and entertain herself. **Morally**, she is beginning to determine whether her actions will get her into trouble or not.

You will be marked using the following rubric for each journal entry.

	2 marks	**1 mark**	**0 marks**
Journal Entry	Content provides an accurate description that supports two stages of development	Content is somewhat accurate in providing a description that supports the two stages of development	Content is incorrect in providing a description that supports the two stages of development
Analysis	Accurate analysis of the two developmental stages	Somewhat accurate analysis of the two developmental stages	Incorrect analysis of the two developmental stages

Writing Your Midterm Examination
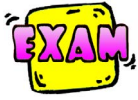
It You will write the midterm examination when you have completed Module 3 of this course. The midterm examination is based on Modules 1 to 3, and is worth 20 percent of your final mark in the course. To do well on the midterm examination, you should review all the work you complete in Modules 1 to 3, including all the learning activities and assignments. You will write the midterm examination under supervision.

Notes

LESSON 4: NATURE AND NURTURE OF GENDER

Lesson Introduction

Gender is the fact that we are either male or female. In this lesson, we will examine how the shaping of gender is illustrated by the effects of nature and nurture. Although genes and hormones define gender, the environment plays a key role. In addition, this lesson will look at cultural variations in gender roles to demonstrate our capacity for learning and adapting.

You will be able to apply what is learned in this lesson to your own life by finding the answers to the following questions:

- How is our sexual orientation determined?
- How am I similar to and how do I differ from people of the opposite sex?
- How have nature and nurture interacted to define me as male or female?

Nature of Gender

Males and females are variations on a single form. Seven weeks after conception, your genes activated your biological sex. This was determined by your twenty-third pair of chromosomes, the **sex chromosomes**. The member of the pair that came from your mother was an X chromosome and the one that came from your father was either an X chromosome (making you a girl) or a Y chromosome (making you a boy). The Y chromosome throws a master switch that triggers the testes to develop and produce testosterone.

Nurture of Gender

What begins because of biology is made more prominent by the environment and our culture. Let's examine how gender roles and gender identity are established.

Gender Roles

In psychology, like in theatre, a role refers to behaviours that we expect of the person that has that position. **Gender roles** are our expectations regarding how men and women behave. Quite often, we stereotype men and women into these roles.

Traditionally, men have initiated dates, driven the car, and made more money, while women have decorated the home, cared for the children, and made less money, if any at all. Times, though, are changing. For instance, in the past, women didn't have the right to vote and now they do. Also, every year, more and more women are receiving post-secondary education and are earning more money than their male counterparts. Nonetheless, the question remains, when does this belief system kick in and from whom do we get these ideas?

Research has shown that children acquire gender-stereotyped beliefs and behaviours from family, teachers, and peers. They acknowledge that certain behaviours are more appropriate for boys and others for girls. Children tend to prefer playmates whose behaviour matches their own.

Gender Identity

Society assigns each of us to a gender. Our sense of being male or female is called our **gender identity**. Some males exhibit more traditionally male traits than others and are considered more masculine. Likewise, some females exhibit more traditionally female traits than others and are considered more feminine. This is called being **gender-typed**.

How do we acquire gender identity? Two theories have been developed to answer this question. They are the social learning theory and the gender schema theory.

- **Social Learning Theory**

   Social learning theory assumes that children learn gender specific behaviours by observing and imitating. They are then rewarded or punished for those behaviours.

   Examples include "big boys don't cry" and "you are being such a good mommy to your dolls". Boys tend to be provided with more sports equipment, tools, and vehicles than girls, whereas girls are provided with more dolls and furniture. Boys tend to wear more blue, red, and white clothing, whereas girls tend to wear more pink and multicoloured clothes.

   Though parents play a key role in gender identity, they are not solely responsible for it. Research has shown that even when families discourage traditional gender typing, children organize themselves into boy roles and girl roles.

- **Gender Schema Theory**

  Gender schema theory assumes that children, through their culture, acquire a concept of what it means to be male and female and that they then adjust their behaviour accordingly. Children organize their world on the basis of gender schemas.

  For example, in language, there is the use of the pronouns he and she. Likewise, dress, toys, and songs also help shape gender schemas. Children then compare themselves with these concepts and adjust their behaviour accordingly. I am male; therefore, I am more masculine, strong, and aggressive. Conversely, I am female; therefore, I am more feminine, sweet, and helpful.

Gender Differences

Over the years, psychologists have examined whether or not there are gender differences in social behaviour. The questions asked by these researchers and their corresponding answers are presented below.

Are there gender differences in social behaviour?

Research has shown that females are more sensitive when dealing with other people while men are more aggressive and dominant. Females are better at recognizing the emotions of other people from facial expressions, body language, and other non-verbal cues.

Are males more aggressive than females?

The research shows that males are more likely to use aggression such as kicking or striking others, pushing, shoving, and using profanity, whereas females are more likely to withdraw or use indirect forms of aggression such as gossiping or targeting another.

Are females more prone to mood disorders?

Research has shown that females are more likely to suffer from symptoms of depression such as sadness, loss of energy, and reduced pleasure in activities that were once enjoyable.

Do females have more math anxiety?

Research has shown that even when females are very competent at math they tend to avoid math-related subjects. They are more aware of and concerned about their feelings, and are more self-critical of their performance.

Do cognitive differences actually exist?

The research has shown that there is no difference in memory or vocabulary between males and females; that females are slightly better at reading, spelling, and math (in the first few years of high school); and that males score higher in general information tasks. Males are also better at spatial visualization.

Why do these differences occur?

Researchers believe that social and cultural factors are not the whole story. There are biological factors that predispose females and males to behave differently. For example, there are differences in the number of cells in one part of the hypothalamus of males and females, and some parts of the corpus callosum are larger in females. It appears that the hormones produced by the ovaries and testes influence brain development.

Lesson Summary

This lesson not only examined how genes and hormones (nature) help define gender, but also how environment (nurture) plays a key role. The different sex chromosomes lead to significant gender differences. Children acquire gender identity through both social learning and the development of gender schemas.

Research has shown that there are small but subtle differences between males and females with respect to several aspects of social behaviour such as aggression, cognitive abilities, and psychological adjustment.

Most psychologists believe that gender differences in behaviour stem primarily from social and cultural factors. There is also some evidence that biological factors such as differences in brain structure and the impact of sex hormones also may play a role.

Learning Activity 3.5: Nurture of Gender

Reflect on the following:

To what extent and in what ways have your peers and your family helped shape who you are?

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Do you consider yourself strongly gender-typed or not strongly gender-typed? What factors do you think have contributed to your feelings of masculinity or femininity?

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There is no answer key for this learning activity as you are to apply the information covered in this lesson to a particular scenario.

Notes

LESSON 5: PERSONALITY THEORIES

Lesson Introduction

Psychologists the world over have tried to find the perfect definition of personality. Some believe that a personality is what people must develop to get along in the world. Others believe that a personality is a mathematical combination of various factors. Still, others believe that a personality is the self that someone chooses to show others.

In this lesson, you will examine personality from many different directions. Developmental psychologists study personality across the lifespan. Biological psychologists look for nature's influence on personality. Health psychologists research the impact of personality on well-being.

In this lesson, personality will be explored from four perspectives: Freud's psychoanalytic theory (with its emphasis on unconscious motives), the humanistic perspective (with its focus on self-fulfillment), the trait theorists' search for the factors that make up personality, and the social-cognitive approach (which investigates the influence of environmental factors and thought processes on personality).

What is Personality?

Psychologists define **personality** as an individual's characteristic pattern of thinking, feeling, and acting. It may be determined by the following:

- Genetics: Our genes combine in various ways and determine our personalities even before we are born.
- Environment: All the factors to which we are exposed after we are born contribute to our personalities.
- Learning: Personality theories based on learning factors suggest that we learn to develop certain personalities based on the responses we get from others.
- Traits: Psychologists believe that we develop, learn, or are born with certain traits that combine to shape our personalities.
- Existential-humanistic considerations: Some theorists, who believe that personality is developed through existential or humanistic considerations, believe that people choose to develop certain personalities based on their philosophical outlooks.

- Unconscious mechanisms: Theorists who believe that unconscious mechanisms determine people's personalities believe that people have no choice in how their personalities develop. Circumstances, maybe even those no longer remembered, have determined one's personality.
- Cognitive factors: Theorists who believe that cognitive factors influence a personality believe that people manipulate their personalities based on goals they wish to achieve.
- Socio-cultural factors: These are factors such as the culture in which a person has grown up and the values held by one's family. Theorists who believe that socio-cultural factors determine personality believe that a person develops a personality based on socio-cultural influences.

Many theorists believe that all of the above factors contribute to the development of a person's personality.

Psychodynamic Perspective

This is the view of personality that is based on certain aspects of Freudian theory such as the importance of unconscious thought processes as a source of personality development.

Freud's View of the Mind

Freud's theory of psychoanalysis came from observations of patients who consulted him. He was fascinated with hypnosis and, as an alternative, he asked his patients to relax and say whatever came to mind. It didn't matter to what point the statement was trivial or embarrassing. He called this technique **free association**. He believed that this was a window into the unconscious mind.

He compared the mind to a big iceberg that has three parts. He called these parts the **conscious**, the **preconscious**, and the **unconscious**. Freud felt that most of our mind is hidden from view like an iceberg. This is the unconscious. The conscious mind—the thoughts and feelings of which we are aware—is like the visible part of the iceberg. Just below the water line of the iceberg is the preconscious. This consists of the thoughts and memories that are not in our current awareness.

| Figure 3.2 | *Freud's View of the Mind* |
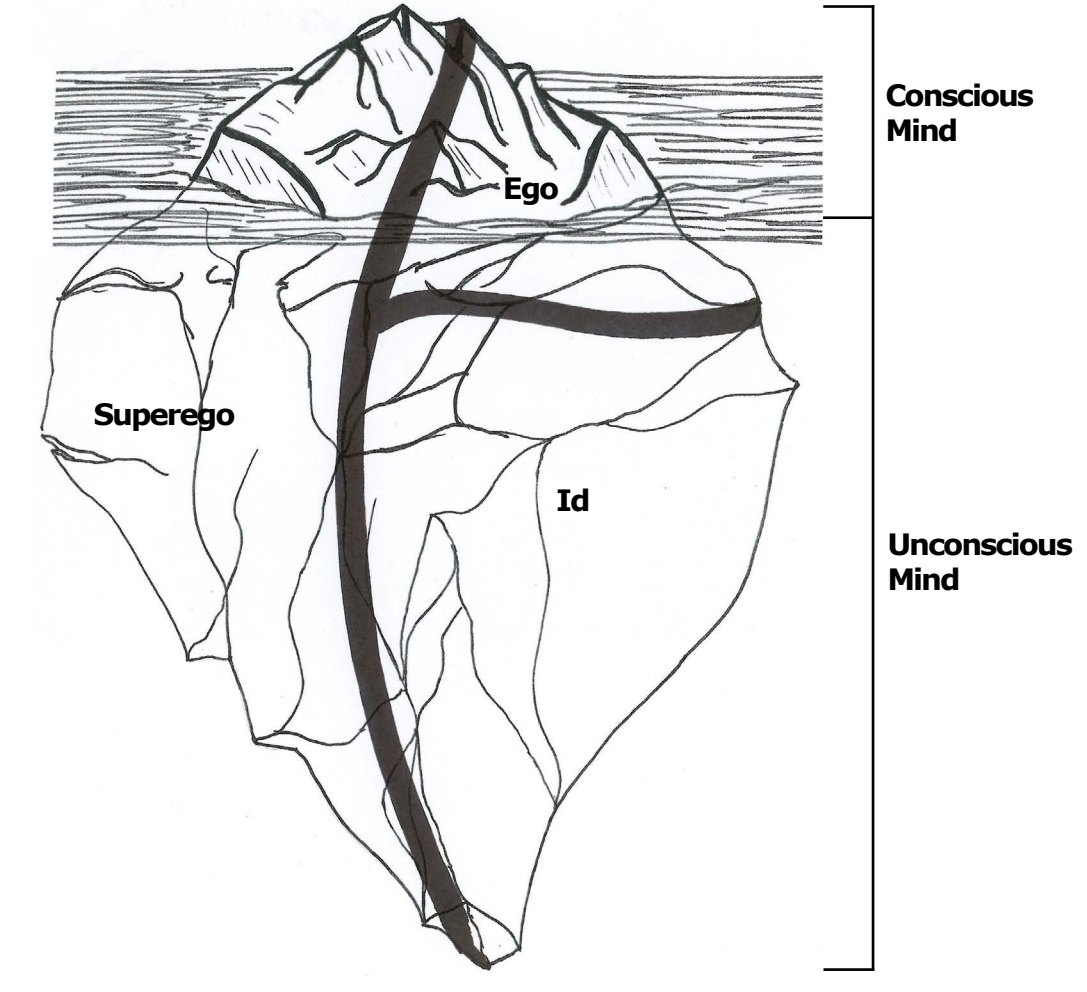
Freud's theory of personality fits into the three parts of the iceberg. He called these the id, the ego, and the superego.

- The **id** is present at birth and consists of unconscious energy from basic aggressive and sexual drives. It operates from the pleasure principle which demands immediate gratification. It has no regard for consequences. If the id's desires are not satisfied, it will create a constant need in a person.

- The **superego** consists of the internalized ideals and standards for judgment that we develop as we interact with parents, peers, and society. It is our voice of conscience. It tells us what we should and shouldn't do. The superego wants perfection. Those with a weak superego give in to urges and impulses without regard for rules.

- The **ego** is the mediator that makes decisions after listening to both the demands of the id and the rules of the superego. It operates from the reality principle. It represents good sense and reason.

Freud believed that a healthy personality was one that could successfully express pleasure-seeking impulses while avoiding punishment or guilt. In order for this to happen, the ego would sometimes have to resort to defensive tactics that Freud called **defence mechanisms**. They are the ego's protection. They reduce anxiety by unconsciously distorting reality.

There are ten defence mechanisms.

1. **Repression:** It removes anxiety-arousing thoughts, feelings, and memories from consciousness. Freud believed that this defence mechanism was the basis of all the other defence mechanisms.

2. **Regression:** It allows an anxious person to retreat to a more comfortable infant-like stage of life.

3. **Denial:** It lets an anxious person refuse to admit that something unpleasant is happening.

4. **Reaction Formation:** It reverses an unacceptable impulse, causing an anxious person to express the opposite of the anxiety-provoking unconscious feeling.

5. **Projection:** It disguises threatening feelings of guilty anxiety by attributing the problem to others.

6. **Rationalization:** It replaces real, anxiety-provoking explanations with more comforting justifications for one's actions. It makes mistakes seem reasonable.

7. **Displacement:** It shifts an unacceptable impulse toward a more acceptable or less threatening object or person.

8. **Compensation:** It emphasizes personal strengths in one area so as to de-emphasize the failure in another area.

9. **Identification:** It lets associations with people or groups that are of higher status occur in order to increase one's own status.

10. **Intellectualization:** It describes painful or emotional personal events in academic terms.

Assignment 3.3: Defence Mechanisms (12 marks)

For each of the situations below, identify which defence mechanism is operating *(1 mark)* and explain how the defence mechanism protects the person from a negative self-image *(1 mark)*.

1. You were toilet trained when you were three years old. You started wetting the bed again years later after your baby sister was born.

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2. You have given up smoking recently and you still crave cigarettes. After catching a cold, you smoked a few cigarettes claiming that they improved your stuffy head.

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3. You have just been told that you failed a major project in English. You thought it was your best work. You blame the educational system for your failure.

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Assignment 3.3: Defence Mechanisms (continued)

4. Although you have never been a great student, you are proud of your talent on the football field.

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5. You just received a letter from a college telling you that you did not meet the college's standards for admission. When your friends ask what you are doing after graduation, you lie and tell them you are going to that college.

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6. You want to end your relationship; however, instead of just telling the truth, you accuse the other person of wanting to break up with you.

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Freud's Psychosexual Stages

Freud believed that all children had to go through similar experiences before they reached adulthood. He categorized these experiences under five unique stages of life. He believed that any problem in adulthood could be traced back to something going wrong during one of these stages. He also believed that if a problem in adulthood was to be fixed, the childhood source of that problem must be dealt with in order to restore mental health.

1. **Oral stage:** The first of these stages is the oral stage which occurs during a person's first year of life. Freud believed that in the first year of life, babies get pleasure from eating and drinking which are both oral activities involving the mouth. If a baby enjoyed oral stimulation too much or was not fed regularly, it could develop problems later in life (for instance, believing anything or saying rude and sarcastic things). These characteristics belong to a person who reacts to an oral fixation by repressing it using the defence mechanism of reaction formation.

2. **Anal stage:** This stage occurs during the second year of life when a child is being toilet trained. Freud believed that certain problems with toilet training could lead to problems later in life such as being overly generous or overly stingy with love, friendship, and possessions. He pointed out that waste is a child's first production. It is fascinating to the child because it is the first thing a child wilfully controls in a world dominated by adults. He believed some children used their newfound bowel control against parents in a struggle of wills. If a parent tried to force toilet training, the child might deliberately hold back in rebellion or, conversely, go at an inappropriate time. Freud believed that the child who holds back might become an anal-retentive personality fixated at the anal stage, who is extremely neat, while the child who goes at an inappropriate time may become an anal-expulsive personality who is chronically messy.

3. **Phallic stage:** This stage occurs during a child's third to sixth year of life. These are the ages when boys and girls realize they are different from each other. They discover their genitals as a source of pleasure. At this stage, they are uninhibited about their bodies until they learn about modesty from parents or siblings. If a child experiences any issues regarding his or her sex organs during this stage, it will signal problems with the opposite sex when the child is older. In light of the fact that the pleasure zone shifted to the genitals in this stage, Freud believed boys felt love for their mothers and hatred, fear, or jealousy for their fathers. They viewed their father as their rival for their mother's love. He called this the **Oedipus complex**. Freud didn't believe in a parallel process for girls, though other psychologists have written about an **Electra complex** in which girls love their father and fear their mother.

4. **Latency stage:** This stage lasts until the age of twelve. It is a stage where psychosexual development is suspended. Children repress their feelings toward the rival parent. Instead, they imitate the same-sex parent. Freud called this the identification process. It serves as an explanation of gender identity, which is our sense of what it means to be either male or female.

5. **Genital stage:** This stage occurs during puberty and solidifies what kind of grown-up a child will become based on all of his or her experiences during the first three stages.

Criticisms of Freud

Freud was highly criticized by the medical community and by other psychologists. They believed that Freud's theories focus too much on childhood. Others believed that his theories lack scientific validity because they can't be scientifically tested. Still, others believed that his theories are sexist against women. The idea of defence mechanisms fared better. There is some evidence that people do indeed use such self-deceptive techniques. Nevertheless, Freud left a lasting legacy.

Neo-Freudians

Freud attracted many followers. Three of these psychologists were Alfred Adler, Carl Jung, and Karen Horney.

Alfred Adler

Adler agreed with Freud's views on the importance of childhood experiences. However, he thought social tensions, not sexual tensions, were crucial to the development of personality. He believed problems centered on feelings of inferiority. If we start to organize our thoughts based on our perceived shortcomings or mistakes, we might develop an inferiority complex.

Carl Jung

Jung, like Freud, believed that three components make up the personality: the ego, the personal unconscious, and the collective unconscious.

- **Ego:** The ego represents everything about which human beings have conscious thoughts. This includes thinking, remembering, and perceiving.

- **Personal Unconscious:** The personal unconscious represents all the things that people were once conscious of in their past but have now forgotten. The personal unconscious includes disturbing thoughts that couldn't be dealt with when they first occurred. These may be emotions felt when a parent unjustly punished, criticized, or abused a child.

- **Collective Unconscious:** The collective unconscious represents the past thoughts and experiences of everyone's previous ancestors. The collective unconscious represents a person's evolutionary experiences. These experiences are unconscious but they may resurface during times of stress or danger.

Karen Horney

Horney believed that Freud's theories were male dominated and that his explanation of female development was inadequate. She believed that social variables were the foundation of personality development. Social expectations created the differences between males and females.

Personality Assessment

a. Psychodynamic Theory

Before providing therapy for a personality disorder, psychologists need to assess personality characteristics. The techniques that are used vary from one perspective to another. Psychodynamic therapists want assessments that reach into and reveal elements of the unconscious. Their assessments include dream analysis, the Thematic Apperception Test (TAT), and the Rorschach Inkblot Test.

- In the TAT, people view images where they really can't tell what is happening and they have to tell stories about the images. As well, they have to describe what is going on in the picture and what happened before and after the scene. The idea is that they will express their inner feelings and interests in the story they've told.

   The following is an example of a projective test that involves reading a story and answering questions.

   You are going for a walk. After you've walked a little way, you come to a forest. Describe the forest.

   You walk into the forest, and find a path. Describe the path.

   As you walk along the path, you find a key. Describe the key. What do you do with the key?

   You continue walking along the path. You find a cup. Describe the cup. What do you do with the cup?

   You continue your journey and you come to some water. Describe the water. How do you get to the other side of the water?

You've been walking for a while. As you continue, the path divides into two paths: one goes uphill and is twisted, narrow, and rocky, the other path slopes downhill and is wide and smooth. Which way do you go? Why?

Next, you come to a field. Describe the field. How do you get to the other side of the field?

On the other side of the field is a wall. Describe the wall. How do you get to the other side of the wall?

What is beyond the wall?

Interpretation

The forest represents your view of life. How did you describe it? Large or small? Dense or sparse? Woods, pine forest, tropical rain forest? Dormant, barren and dead, or alive, lush and fertile?

The path is how you view your path or journey through life. Is it wide or narrow, straight or twisted, long or short, smooth or rough, heavily-travelled, littered and so on, or unspoiled, pristine and relatively untraveled?

The key represents knowledge. What is your view of knowledge? What do you do with knowledge when you have it in your grasp?

The cup represents religion. What is your view of religion? Is the religious aspect of your life full or empty? Is it potable? What do you do with it?

The water represents sex. Is it a huge ocean? A beautiful, tranquil lake? A rushing river? A babbling brook? A small, muddy puddle? A dried up stream?

How you get to the other side of the water represents your approach to sex. Did you jump in and swim? Did you play in it? Did you build a bridge over it, or walk through it? Did you simply ignore it? Did you follow it to see where it goes?

When the path divides, which branch you choose represents how you want to live life from that point forward. Do you take the easy way or the hard way? Why?

The field represents your view of middle- and old-age. Is yours a small "field," or a large one? How long, how wide? What kind of field is it? A meadow or a field full of thorns and branches? Has it been plowed? Are there crops growing? (Is there any water in it?)

The wall represents DEATH. Is it high or low? How long or wide is it? Is it firm and solid, or shaky or crumbly? What is it made of? Stones? Bricks? Concrete? Trees? Bushes?

Getting to the other side represents dying. How do you view death? Easy or difficult? Something you look forward to or dread? Something you can choose not to do, or at least how and when you do it?

What's beyond the wall represents your view of life after death. Another path? Another forest? Another meadow? (More water?)

■ In the Rorschach ink blot test you are asked to look at ink blots and indicate what you see. Those administering the test assume that a person's responses will reveal their inner feelings. The following are examples of ink blots.

Figure 3.3	**Ink Blots**

The TAT and the Rorschach ink blot test are examples of projective tests because they are designed to provide insight into the person's unconscious motives.

b. Humanistic Theory

The humanistic theory focuses on the fulfilled individual, with the goal of helping us all reach our full potential. In this perspective, all factors that are relevant to the human condition are looked at with an emphasis on conscious experience and a focus on free will and creative abilities.

In contrast to the ideas of the psychodynamic perspective, humanistic psychologists believe that personality is shaped more by our unique capacity to determine our future than by our unconscious conflicts or past learning.

Two important psychologists in this perspective are Abraham Maslow and Carl Rogers.

Maslow Revisited

The last module included information on how Maslow developed a hierarchy of needs. He used this to help explain personality and personal growth. To review, he believed that we must satisfy our basic physiological needs for food, water, and air before attempting to meet the security and safety needs of the second level. Only then can we meet the love and belonging needs of the third level. After meeting our needs for self-esteem, we could finally strive to fulfill our potential as humans and obtain self-actualization. Characteristics of people who are self-actualized include:

■ self-aware and self-accepting

■ open and spontaneous

■ loving and caring

■ not paralyzed by others' opinions

■ focused on a particular task they often see as a mission

■ involved in a few deep relationships, not superficial ones

■ likely to have been moved by personal peak experiences that surpass ordinary consciousness

Carl Rogers and the Person-Centered Approach

Rogers created the self theory. He believed that even though people are innately good, they require certain things from their interactions with others. He believes we do this through **unconditional positive regard** or an attitude of total acceptance toward the other person. Another way to nurture growth is by being **genuine**. According to Rogers, genuine people freely express their feelings and aren't afraid to disclose details about themselves. Finally, we nurture growth by being **empathic**. This involves sharing thoughts, as well as understanding and reflecting on the other person's feelings. Acceptance, genuineness, and empathy help build strong relationships. They are extremely important in the client/therapist relationship.

Assessing Personality with the Humanistic Perspective

Assessment involves asking questions about yourself. This includes all of the feelings and thoughts you have about yourself. Clients would be asked to describe their ideal self and their actual self. Growth during therapy involved measuring the difference between ratings of the ideal self and the actual self.

c. Trait Theory

Trait theorists believe that we can describe people's personalities by specifying their main characteristics or traits. These characteristics, like honesty or laziness, are thought to be stable through the lifespan and to motivate behaviour in order to maintain the trait. When we say a person is friendly, we mean that the person acts in a friendly manner across different situations and times. Three psychologists have offered theories regarding personality traits and ways that we can categorize them. These researchers are Gordon Allport, Raymond Cattell, and Hans Eyesenck.

Gordon Allport's Trait Theory

Allport believed that individual personalities are unique. He identified about 18,000 ways to describe people. Because of the amount of data, it was very difficult for others to test his theory.

Raymond Cattell's Factor Analysis

Cattell used statistical analysis to figure out the relationships among traits. He used factor analysis to find major trends in large amounts of data. He believed that there are 16 factors that can be used to assess personality. These are referred to as 16PF. He administered the test to groups of people from different occupations. Group profiles emerged. For example, writers tend to be highly imaginative, airline pilots are tough-minded, and creative artists are intelligent and sensitive.

Hans Eyesenck's Biological Dimensions

Eyesenck was interested in looking for a biological link to personality. Using statistical techniques he was able to come up with two dimensions. They are introverted-extraverted and unstable-stable.

Figure 3.4   **The Four Quadrants of Eysenck's Personality Circle**

Figure 3.4: The Four Quadrants of Eysenck's Personality Circle
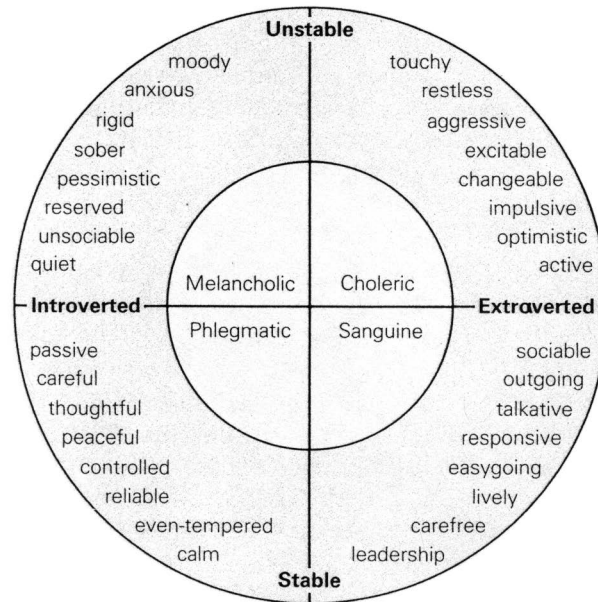
Big Five Traits

It should come as no surprise that there is great debate over the issue of how many traits are needed to describe a personality. Researchers in the 1980s developed a list of five traits that appear to be stable in adults. They believe that these five traits provide an adequate description of personality. They are: agreeableness, conscientiousness, emotional stability, extraversion, and openness.

- Agreeableness: This means soft-hearted, trusting, and helpful; or ruthless, suspicious, and uncooperative.
- Conscientiousness: This means organized, careful, and disciplined; or disorganized, careless, and impulsive.
- Emotional stability: This means calm, secure, and self-satisfied; or anxious, insecure, and self-pitying.
- Extraversion: This means sociable, fun-loving, and affectionate; or retiring, serious, and reserved.
- Openness: This means imaginative, independent, and prefers variety; or practical, conforming, and prefers routine.

Assessing Personality Using Trait Theory

Trait researchers use personality inventories to assess personality. Individuals provide written answers to true-false or multiple-choice questions. These types of tests are called objective tests. They are more likely to show validity. In other words, they are more likely to measure what you're looking for and to show reliability. In short, they can be replicated by other researchers.

An example of this type of test is the **Minnesota Multiphasic Personality Inventory (MMPI)**. It has ten clinical scales that are used to diagnose psychological disorders.

Examples of some of the scales are hypocondriasis (concern with body symptoms), depression (pessimism, hopelessness), and social introversion (shy, inhibited).

One of the problems with this type of test is that it is possible to fake perfection by answering questions in socially desirable ways. Researchers have suggested that the best report of someone's personality is to get peer reports.

Trait theory may describe our personality, but it does not offer any insight into why we behave the way we do. The last perspective that we are going to look at considers the effect that our thoughts have on our behaviour. This perspective is the social-cognitive perspective.

d. Social-Cognitive Theory

The social-cognitive theory combines research on social behaviour, cognition, and learning. The key researcher in this area is Alfred Bandura. He and others believe that we learn by observing and modeling the behaviours of others, or by having certain behaviours reinforced or rewarded. In order to understand personality, we need to look at our current situation, and determine what our thoughts were before, during, and after an event. The way that we interact with our environment is called **reciprocal determinism**. It involves the following three factors that shape personality:

- your thoughts
- your environment
- your behaviours

How does your behaviour change in different situations? How do you perceive or interpret each situation? How does the situation affect your behaviour?

One way to look at these interactions is to look at **personal control**.

Personal Control

Do you feel that chance, or something beyond your control, controls your fate? Then you have an **external locus of control**.

Do you feel that you control your own fate? Then you have an **internal locus of control**.

These two terms were developed by Julian Rotter. Research that compares how external and internal locus of control correlate with behaviour and achievement has found that internals are less depressed, more likely to be healthy and achieve better at school, more independent, and cope better with stress. If you are an external, can you learn to be an internal? The answer to this question comes with the research of Martin Seligman on learned helplessness.

Learned Helplessness and Learned Optimism

Learned helplessness occurs when we learn to avoid repeated bad events. Depression and hopelessness emerge in people who face traumatic events over which they have no control. People can also learn optimism. Seligman was the psychologist who developed the positive psychology movement. Positive psychology studies how we can function most effectively and what factors enable us to thrive. Seligman and others have found that we all have either an optimistic or pessimistic explanatory style.

- If you have an **optimistic style** and something goes wrong, then you are more likely to explain the situation as temporary, not your fault, and something that is confined to the particular situation.

- If you have a **pessimistic style** and something goes wrong, then you are more likely to explain the situation as being your fault, being bigger than it really is, and totally out of your control.

Seligman's research has found that pessimists can change their negative thought patterns to consider other alternatives.

Assessing Personality Using the Social-Cognitive Perspective

Social-cognitive theorists use experiments to study how different situations affect people's attitudes and behaviours. They vary the situation and look for personality consistencies. Another method is to look at a person's past behaviour patterns in order to predict future behaviour. If the person and the situation remain the same, the best predictor of future behaviour is previous actions.

The social-cognitive perspective is an objective scientific approach to looking at personality. It includes cognition and learning, and emphasizes the role of the environment. It doesn't take into account is our emotions. This remains an important research area for the future.

Learning Activity 3.6: Your Personality

Write four descriptions of your personality. Each one should be based on a different theory of personality. The four theories are psychodynamic, humanistic, trait, and social-cognitive.

According to psychodynamic theory:

_____
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According to humanistic theory:

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According to trait theory:

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continued

Learning Activity 3.6: Your Personality (continued)

According to social-cognitive theory:

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_____
_____
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_____

There is no answer key for this learning activity as you are to apply the information in this lesson to your personality.

Lesson Summary

In this lesson, we viewed personality from several perspectives. Personality is an individual's characteristic pattern of thinking, feeling, and acting. Each perspective fills in another piece of the personality puzzle.

The psychodynamic perspective looks at unconscious motives and defence mechanisms as an explanation to how our personality develops.

The humanistic perspective emphasizes conscious experience, free will, and creativity.

The trait perspective considers our enduring patterns of behaviour.

The social-cognitive perspective considers the effects of the particular situation, our past learning, and our ways of thinking.

In order for personality to be best understood, we must view it from all of these angles.

MODULE 3 SUMMARY

Congratulations. You have finished the third module of the course.

Submitting Your Assignments

It is now time for you to submit your assignments from Module 3 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 3 assignments and organize your material in the following order:

❑ Module 3 Cover Sheet (found at the end of the course Introduction)

❑ Assignment 3.1: Parenting Patterns

❑ Assignment 3.2: Development throughout the Life Cycle

❑ Assignment 3.3: Defence Mechanisms

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Midterm Examination

Congratulations, you have finished Module 3 in the course. The midterm examination is out of 100 marks and worth 20% of your final mark. In order to do well on this examination, you should review all of your learning activities and assignments from Modules 1 to 3.

You will complete this examination while being supervised by a proctor. You should already have made arrangements to have the examination sent to the proctor from the Distance Learning Unit. If you have not yet made arrangements to write it, then do so now. The instructions for doing so are provided in the Introduction to this module.

A maximum of **3 hours** is available to complete your midterm examination. When you have completed it, the proctor will then forward it to the Distance Learning Unit for assessment. Good luck!

Format

The midterm consists of four types of questions; the values of which combine for a total of 100 marks.

The midterm will have four parts.

- **Matching Definitions (15 marks)**

  You will match a list of terms with corresponding definitions. Each definition will be used only once. There will be 30 questions worth 0.5 mark each.

- **Multiple-Choice Questions (35 marks)**

  In this section of the exam, you will choose the single best answer for each of the questions given. There will be 35 questions worth 1 mark each.

- **Short-Answer Questions (20 marks)**

  You will choose 4 out of 5 short-answer questions (5 marks each) and you will answer each question clearly and thoroughly in the space provided.

- **Long-Answer Questions (30 marks)**

  You will choose 3 out of 4 long-answer questions (10 marks each) and you will answer each question clearly and thoroughly in the space provided.

Study Strategies

In preparing for this midterm examination, first **review all of the learning activities and assignments** that you completed in this course. You can answer the questions in those exercises as though you were asked to answer these again and then you can compare your answers with the answer key as well as with the answers you wrote when you completed the modules.

Reviewing vocabulary is also an excellent way to review concepts. You can practice defining terms and psychological theories—perhaps by using index cards (using one side for a term and the other side for its definition). Keep in mind that one section of the midterm asks you to *connect* pairs of terms by explaining how they are related, so try to connect vocabulary terms to one another as you study their definitions.

Good luck as you prepare for the midterm examination. If you have completed all of the learning activities and assignments, and you have studied using the suggestions above, you have prepared yourself well. The midterm examination will be an opportunity for you to show what you know.

The midterm practice examination is also an excellent study aid for reviewing Modules 1 to 3.

Midterm Practice Examination and Answer Key

To help you succeed in your examination, a practice examination can be found in the learning management system (LMS). The midterm practice examination is very similar to the actual examination that you will be writing. The answer key is also included so that, when you have finished writing the practice examination, you can check your answers. This will give you the confidence that you need to do well on your examination. If you do not have access to the Internet, contact the Distance Learning Unit at 1-800-465-9915 to get a copy of the practice examination and the answer key.

To get the most out of your midterm practice examination, follow these steps:

1. Study for the midterm practice examination as if it were an actual examination.

2. Review those Learning Activities and Assignments from Modules 1 to 3 that you found the most challenging. Reread those lessons carefully and learn the concepts.

3. Ask your learning partner and your tutor/marker for any help you need.

4. Review your lessons from Modules 1 to 3, including all of your notes, learning activities, and assignments.

5. Bring the following to the Midterm Practice Examination: pens/pencils (2 or 3 of each) and blank paper.

6. Write your midterm practice examination as if it were an actual examination. In other words, write the entire examination in one sitting, and don't check your answers until you have completed the entire examination. Remember that the time allowed for writing the midterm examination is 3 hours.

7. Once you have completed the entire examination, check your answers against the answer key. Review the questions that you got wrong. For each of those questions, you will need to go back into the course and learn the things that you have missed.

Module 3

Learning Activity Answer Key

Learning Activity 3.1: Cognitive Development

Given the schema and the scenario, predict how information may be interpreted using assimilation and accommodation.

Schema: Everything with wheels is a truck.

Scenario: Child is presented with a bicycle.

If he assimilates, he thinks the bicycle is a type of truck.

If he accommodates, he changes his concept of things with wheels to include trucks and bikes.

Schema: Grade 9 kids don't take their school work seriously.

Scenario: A grade 9 student gives a great presentation about World War II at the Remembrance Day ceremony.

If you assimilate, you think that maybe this wasn't a great Grade 9 student or that they must have gotten help preparing the presentation.

If you accommodate, you change your idea and begin to think that maybe some Grade 9 students do take their school work seriously.

Schema: My parents don't know what it is like to be a teenager.

Scenario: Your grandmother tells you a story about your mother's rebellious teenage years.

If you assimilate, you think that your mother's rebellious years were very different than what you are doing.

If you accommodate, you change your schema to include the idea that your parents might know what it is like, but they will either not acknowledge it to you or they want something different from you as they have learned from their mistakes.

Schema: I can't relate to people of different races or ethnicities because we are so different.

Scenario: The new student in your class is of a different race and you find out that you have a lot more in common than you have differences.

If you assimilate, you think that this new person is an exception.

If you accommodate, you start to change your idea and you get to know people from different races and cultures.

Learning Activity 3.2: Piaget's Theory

For each of the situations below, using Piaget's theory, indicate the stage, the age, and the concept that is described.

1. Jake looks at a string of plastic beads: six are white and ten are blue. Jake is asked how many white beads there are and answers correctly—six. He is then asked how many plastic beads there are and answers ten.

   Stage: **Preoperational**

   Age: **2 to 6**

   Concept: **Cannot classify by more than one category**

2. Carrie can solve an algebraic equation.

   Stage: **Formal operational**

   Age: **12 and up**

   Concept: **Hypothetical reasoning**

3. Pierre loves to play peek-a-boo. He laughs when someone puts a blanket over his face and then pulls it away.

   Stage: **Sensorimotor**

   Age: **Birth to age 2**

   Concept: **Beginning of object permanence**

4. Paolo sees a piece of ribbon tied in a bow. He unties the bow and stretches the ribbon to its full length. His mother asks him which is longer: the ribbon in the bow or the ribbon stretched out. He answers that they are the same.

   Stage: **Concrete operational**

   Age: **6 to 11**

   Concept: **Conservation**

Learning Activity 3.3 Kohlberg's Theory

For each situation below, decide in which stage of Kohlberg's theory the person is responding. Explain your reasoning.

1. Tamara has five tests in one day. She is a good student but she didn't have time to study for her French test. The girl that sits next to her is also a good student. That girl has copied from Tamara on numerous occasions. Tamara decides to copy from her. Regardless, she thinks that she should never have had five tests in one day.

   Stage 2: Tamara is using the rule of reciprocity.

2. Scott thought about leaving school early and going to a basketball game. He stayed in school because he was afraid of getting caught.

   Stage 1: Scott acts based on the fear of punishment.

3. Juanita's friends were at the mall and someone suggested that they do a little shoplifting just to see what they could get away with. Juanita wouldn't participate and said stealing was wrong.

   Stage 4: Juanita is acting in accordance with law or religion. Her friends are in stage one because they are concerned with external consequences.

4. Muhammad lives with his mother who is very ill and needs to get to the hospital. He steals a car in order to get her to the hospital.

   Either stage three or five. If in stage three, Muhammad is motivated by his love for his mother. If in stage five, his primary motivation would be his concern for life.

5. Martina lives in a war-torn region of the world. She distributes food to orphans living in the streets, but does so in secret because this activity is against the law in this part of the world.

   Stage 5: Martina risks her life and defies the law because of her concern for human life.

6. Grant wants to spend time after school volunteering at the hospital. He is a good volleyball player. Sometimes though, practice interferes with volunteering. The coach and his teammates pressure him to play. He decides to play with the team instead of volunteering.

   Stage 3: Grant seeks the approval of significant people in his life—his friends and his coach.

Learning Activity 3.4: Erikson's Social Development Theory

Based on Erikson's views on adolescence, answer the following questions.

1. What are three characteristics of establishing an identity?

   Three characteristics are defining oneself with the world, feeling a sense of belonging, and feeling unique.

2. What does it mean to have an identity?

   It means defining and accepting oneself, knowing what one wants out of life, being committed to goals, evaluating the ability to achieve goals, developing values, and being loyal to those values.

3. What situation creates identity confusion?

   Decision making creates identity confusion.

4. How do adolescents try to solve their identity confusion?

   Trying on roles, making decisions too soon, and falling in love before one's identity is set are all ways that adolescents try to solve identity confusion.

5. What tasks should adolescents complete in order to establish their identities?

   The tasks that adolescents should complete are acceptance of physical changes, movement toward peer relationships, independence from parents, establishment of dating relationships, and movement toward a career.

6. What are some of the identity tests that adolescents face as they near completion of the stage?

   Some of these tests are completing high school, going to college or university or entering the workplace, and forming new friendships.

Learning Activity 3.5: Nurture of Gender

Reflect on the following:

To what extent and in what ways have your peers and your family helped shape who you are?

Do you consider yourself strongly gender-typed or not strongly gender-typed? What factors do you think have contributed to your feelings of masculinity or femininity?

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

Learning Activity 3.6: Your Personality

Write four descriptions of your personality. Each one should be based on a different theory of personality. The four theories are psychodynamic, humanistic, trait, and social-cognitive.

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

Notes

MODULE 3

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Scenario: The new student in your class is of a different race and you find out that you have a lot more in common than you have differences.

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   Stage 2: Tamara is using the rule of reciprocity.

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   Stage 1: Scott acts based on the fear of punishment.

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   Either stage three or five. If in stage three, Muhammad is motivated by his love for his mother. If in stage five, his primary motivation would be his concern for life.

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6. Grant wants to spend time after school volunteering at the hospital. He is a good volleyball player. Sometimes though, practice interferes with volunteering. The coach and his teammates pressure him to play. He decides to play with the team instead of volunteering.

   Stage 3: Grant seeks the approval of significant people in his life—his friends and his coach.

Learning Activity 3.4: Erikson's Social Development Theory

Based on Erikson's views on adolescence, answer the following questions.

1. What are three characteristics of establishing an identity?

   Three characteristics are defining oneself with the world, feeling a sense of belonging, and feeling unique.

2. What does it mean to have an identity?

   It means defining and accepting oneself, knowing what one wants out of life, being committed to goals, evaluating the ability to achieve goals, developing values, and being loyal to those values.

3. What situation creates identity confusion?

   Decision making creates identity confusion.

4. How do adolescents try to solve their identity confusion?

   Trying on roles, making decisions too soon, and falling in love before one's identity is set are all ways that adolescents try to solve identity confusion.

5. What tasks should adolescents complete in order to establish their identities?

   The tasks that adolescents should complete are acceptance of physical changes, movement toward peer relationships, independence from parents, establishment of dating relationships, and movement toward a career.

6. What are some of the identity tests that adolescents face as they near completion of the stage?

   Some of these tests are completing high school, going to college or university or entering the workplace, and forming new friendships.

Learning Activity 3.5: Nurture of Gender

Reflect on the following:

To what extent and in what ways have your peers and your family helped shape who you are?

Do you consider yourself strongly gender-typed or not strongly gender-typed? What factors do you think have contributed to your feelings of masculinity or femininity?

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

Learning Activity 3.6: Your Personality

Write four descriptions of your personality. Each one should be based on a different theory of personality. The four theories are psychodynamic, humanistic, trait, and social-cognitive.

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

Notes

GRADE 12 PSYCHOLOGY

Midterm Practice Examination

Name: _____

Student Number: _____

Attending ❑   Non-Attending ❑

Phone Number: _____

Address: _____

_____

_____

For Marker's Use Only

Date: _____

Final Mark _____ /100 = _____%

Comments:

Instructions

The midterm examination will be weighted as follows:

- Modules 1 to 3: 100%

The format of the midterm examination will be as follows:

- Part 1: Matching Definitions and Famous Psychologists
  (30 questions, 0.5 mark each)
- Part 2: Multiple-Choice Questions (35 questions, 1 mark each)
- Part 3: Short-Answer Questions (choose 4 out of 5 questions, 5 marks each)
- Part 4: Long-Answer Questions (choose 3 out of 4 questions, 10 marks each)

The following practice midterm examination contains a sample of the types of questions you will find on the midterm examination.

Part 1: Matching Definitions and Famous Psychologists
(30 x 0.5 mark = 15 marks)

On the midterm examination, there are 30 questions each worth 0.5 mark to a total of 15 marks. Below is a sample of the types of terms you are responsible for learning.

Match the terms or names of the psychologists on the left with the correct description on the right. Place the corresponding number on the line next to the term or name.

—— data

—— debriefing

—— emotions

—— empathetic

—— fraternal twins

—— Freud

—— gender roles

—— neuron

—— perceptual constancy

—— primary sex characteristics

—— psychology

—— range

—— sensation

—— stress

—— zygote

1. The act of telling participants the purpose of the study.

2. These develop from two different fertilized eggs.

3. It is the scientific study of behaviour and mental processes.

4. The name of a psychiatrist who believed that psychological problems could be traced to childhood sexual conflicts.

5. These are full-bodied responses involving arousal, behaviours, and experience.

6. The difference between the highest score and the lowest score.

7. This is a newly fertilized egg.

8. This is understanding that things will remain constant even though there may be changes in the distance, angle of view, or lighting level of an object.

9. These are expectations about the way men and women behave.

10. These are the reproductive organs in humans.

11. This is information our nervous system receives from the environment.

12. It is the information that you collect.

13. It involves sharing thoughts, and understanding and reflecting the other person's feelings.

14. It is a process by which we perceive and respond to events that we see as threatening or challenging.

15. This is the name of the individual cells found in the brain.

Name: _____

Part 2: Multiple-Choice Questions *(35 x 1 mark = 35 marks)*

On the midterm examination, there are 35 multiple-choice questions each worth 1 mark to a total of 35 marks. Below is a sample of ten multiple-choice questions.

Circle the letter beside the best answer for each multiple-choice question.

1. Which of the following behaviours can best be described as overt behaviour?
   a. You are watching TV game shows.
   b. You are thinking about the answer to a contestant's question.
   c. You are sad that the contestant answered incorrectly.
   d. You are wondering whether or not there are any frozen waffles left in the freezer.

2. Which of the following methods of studying the brain produces an x-ray as several cameras rotate around the brain to take the image?
   a. Magnetic Resonance Imaging (MRI)
   b. Positron Emission Tomography (PET scan)
   c. Computerized Axial Tomography (CAT scan)
   d. Electroencephalogram (EEG)

3. In order to understand personality, trait theorists attempt to…
   a. create traits that fit people
   b. increase the number of basic traits that have been identified
   c. classify traits and discover how they are related to behaviour
   d. reduce the common traits to measures of temperament

4. Which of the following is not true of a percentile rank?
   a. It compares one score with other scores in an imaginary group of 100 individuals.
   b. It compares a score to an imaginary score of 100.
   c. It indicates where a score stands in that group.
   d. It indicates how many people had equal or lower scores.

5. A neuron does all of the following except…
   a. receive information from another neuron
   b. carry information
   c. pass on information to the next neuron in line
   d. receive and carry information to the neurotransmitter

6. The theory according to which children learn from their culture a concept of what it means to be male and female and then adjust their behaviour to fit is the…
   a. Social Learning Theory
   b. Gender Schema Theory
   c. Gender Identity Theory
   d. Gender Role Theory

7. William James' approach to psychology was defined as…
   a. behaviour
   b. the mind as a function of the organism
   c. the personality
   d. inner needs, fulfillment, the search for identity, and other human concerns

8. Twin and adoption studies have determined that…
   a. nature determines who we are
   b. nurture determines who we are
   c. nature and nurture are important in determining who we are
   d. nature and nurture are not important in determining who we are

9. Denial, bargaining, and acceptance are three stages of Kubler-Ross's theory on death and dying. The other two stages are…
   a. anger and depression
   b. grieving and depression
   c. sadness and anger
   d. sadness and grieving

10. Which statement about social-cognitive theory is incorrect?
   a. Social-cognitive theorists use experiments to study how different situations affect people's attitudes and behaviours.
   b. Social-cognitive theorists look at a person's past behaviour patterns in order to predict future behaviour.
   c. Social-cognitive perspective is an objective, scientific approach to looking at personality.
   d. Social-cognitive perspective includes cognition and learning, emphasizes the environment, and takes individual's emotions into account.

Name: _____

Part 3: Short-Answer Questions *(4 x 5 marks = 20 marks)*

On the midterm examination, you will be asked to answer **4 of the 5** short-answer questions presented, each worth 5 marks to a total of 20 marks. Below is an example of a short-answer question.

1. There are five different theories of emotion.
   a. James-Lange Theory of Emotion
   b. Cannon-Bard Theory of Emotion
   c. Schacter's Theory of Emotion
   d. Zajonc's Theory of Emotion
   e. Lazarus' Theory of Emotion

   In five separate paragraphs, comment on how each of these theories would explain Marlene's emotional reaction in the following scenario. *(5 x 1 mark = 5 marks)*

   Marlene is babysitting a nine-month-old baby. She is holding the baby in her arms when a fierce dog appears out of nowhere. The dog leaps for the baby's face. Marlene immediately ducks for cover to protect the baby and screams at the dog. She notices that her heart is pounding and she has broken out into a sweat.

   _____

   _____

   _____

   _____

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   _____

   _____

   _____

   _____

   _____

Name: _____

Part 4: Long-Answer Questions *(3 x 10 marks = 30 marks)*

On the midterm examination, you will be asked to answer **3 of the 4** long-answer questions presented, each worth 10 marks to a total of 30 marks. Below is an example of a long-answer question.

1. Freud believed that a healthy personality was one that could successfully express pleasure-seeking impulses while avoiding punishment or guilt. For this to happen, sometimes the ego would have to resort to defence tactics that Freud called defence mechanisms. Complete the following chart identifying 5 of the 10 defence mechanisms proposed by Freud *(1 mark each)* and provide a scenario that would be an example of the defence mechanism in action *(1 mark each)*.

Defence Mechanism	Scenario

Defence Mechanism	Scenario

GRADE 12 PSYCHOLOGY

Midterm Practice Examination
Answer Key

Name: _____

Student Number: _____

Attending ❏   Non-Attending ❏

Phone Number: _____

Address: _____

_____

_____

Instructions

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- Modules 1 to 3: 100%

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> **The following practice midterm examination contains a sample of
> the types of questions you will find on the midterm examination.**

Part 1: Matching Definitions and Famous Psychologists
(30 x 0.5 mark = 15 marks)

On the midterm examination, there are 30 questions each worth 0.5 mark to a total of 15 marks. Below is a sample of the types of terms you are responsible for learning.

Match the terms or names of the psychologists on the left with the correct description on the right. Place the corresponding number on the line next to the term or name.

12	data (Module 1, Lesson 4)	1.	The act of telling participants the purpose of the study.
1	debriefing (Module 1, Lesson 6)	2.	These develop from two different fertilized eggs.
5	emotions (Module 2, Lesson 7)	3.	It is the scientific study of behaviour and mental processes.
13	empathetic (Module 3, Lesson 5)	4.	The name of a psychiatrist who believed that psychological problems could be traced to childhood sexual conflicts.
2	fraternal twins (Module 2, Lesson 3)	5.	These are full-bodied responses involving arousal, behaviours, and experience.
4	Freud (Module 1, Lesson 3)	6.	The difference between the highest score and the lowest score.
9	gender roles (Module 3, Lesson 4)	7.	This is a newly fertilized egg.
15	neuron (Module 2, Lesson 1)	8.	This is understanding that things will remain constant even though there may be changes in the distance, angle of view, or lighting level of an object.
8	perceptual constancy (Module 2, Lesson 5)	9.	These are expectations about the way men and women behave.
10	primary sex characteristics (Module 3, Lesson 2)	10.	These are the reproductive organs in humans.
3	psychology (Module 1, Lesson 2)	11.	This is information our nervous system receives from the environment.
6	range (Module 1, Lesson 5)	12.	It is the information that you collect.
11	sensation (Module 2, Lesson 4)	13.	It involves sharing thoughts, and understanding and reflecting the other person's feelings.
14	stress (Module 2, Lesson 8)	14.	It is a process by which we perceive and respond to events that we see as threatening or challenging.
7	zygote (Module 3, Lesson 1)	15.	This is the name of the individual cells found in the brain.

Name: _____

Part 2: Multiple-Choice Questions *(35 x 1 mark = 35 marks)*

On the midterm examination, there are 35 multiple-choice questions each worth 1 mark to a total of 35 marks. Below is a sample of ten multiple-choice questions.

Circle the letter beside the best answer for each multiple-choice question.

1. Which of the following behaviours can best be described as overt behaviour? (Module 1, Lesson 1)
   a. **You are watching TV game shows.**
   b. You are thinking about the answer to a contestant's question.
   c. You are sad that the contestant answered incorrectly.
   d. You are wondering whether or not there are any frozen waffles left in the freezer.

2. Which of the following methods of studying the brain produces an x-ray as several cameras rotate around the brain to take the image? (Module 2, Lesson 2)
   a. Magnetic Resonance Imaging (MRI)
   b. Positron Emission Tomography (PET scan)
   c. **Computerized Axial Tomography (CAT scan)**
   d. Electroencephalogram (EEG)

3. In order to understand personality, trait theorists attempt to… (Module 3, Lesson 5)
   a. create traits that fit people
   b. increase the number of basic traits that have been identified
   c. **classify traits and discover how they are related to behaviour**
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4. Which of the following is not true of a percentile rank? (Module 1, Lesson 5)
   a. It compares one score with other scores in an imaginary group of 100 individuals.
   b. **It compares a score to an imaginary score of 100.**
   c. It indicates where a score stands in that group.
   d. It indicates how many people had equal or lower scores.

5. A neuron does all of the following except… (Module 2, Lesson 1)
   a. receive information from another neuron
   b. carry information
   c. pass on information to the next neuron in line
   d. **receive and carry information to the neurotransmitter**

6. The theory according to which children learn from their culture a concept of what it means to be male and female and then adjust their behaviour to fit is the… (Module 3, Lesson 4)
   a. Social Learning Theory
   b. Gender Schema Theory
   c. Gender Identity Theory
   d. Gender Role Theory

7. William James' approach to psychology was defined as… (Module 1, Lesson 3)
   a. behaviour
   b. the mind as a function of the organism
   c. the personality
   d. inner needs, fulfillment, the search for identity, and other human concerns

8. Twin and adoption studies have determined that… (Module 2, Lesson 3)
   a. nature determines who we are
   b. nurture determines who we are
   c. nature and nurture are important in determining who we are
   d. nature and nurture are not important in determining who we are

9. Denial, bargaining, and acceptance are three stages of Kubler-Ross's theory on death and dying. The other two stages are… (Module 3, Lesson 3)
   a. anger and depression
   b. grieving and depression
   c. sadness and anger
   d. sadness and grieving

10. Which statement about social-cognitive theory is incorrect? (Module 3, Lesson 5)
    a. Social-cognitive theorists use experiments to study how different situations affect people's attitudes and behaviours.
    b. Social-cognitive theorists look at a person's past behaviour patterns in order to predict future behaviour.
    c. Social-cognitive perspective is an objective, scientific approach to looking at personality.
    d. Social-cognitive perspective includes cognition and learning, emphasizes the environment, and takes individual's emotions into account.

Name: _____

Part 3: Short-Answer Questions *(4 x 5 marks = 20 marks)*

On the midterm examination, you will be asked to answer **4 of the 5** short-answer questions presented, each worth 5 marks to a total of 20 marks. Below is an example of a short-answer question.

1. There are five different theories of emotion.
   a. James-Lange Theory of Emotion
   b. Cannon-Bard Theory of Emotion
   c. Schacter's Theory of Emotion
   d. Zajonc's Theory of Emotion
   e. Lazarus' Theory of Emotion

   (Module 2, Lesson 7)

   In five separate paragraphs, comment on how each of these theories would explain Marlene's emotional reaction in the following scenario. *(5 x 1 mark = 5 marks)*

   Marlene is babysitting a nine-month-old baby. She is holding the baby in her arms when a fierce dog appears out of nowhere. The dog leaps for the baby's face. Marlene immediately ducks for cover to protect the baby and screams at the dog. She notices that her heart is pounding and she has broken out into a sweat.

   In the James-Lange theory of emotion, emotion is due to perceiving changes in the body. Specifically, it is due to reactions of the autonomic nervous system. Marlene's emotional reaction could be explained as follows. Marlene saw the fierce dog and she became aware of her physiological response: her heart was pounding and she broke out into a sweat. She then labeled her reaction as fear.

   In the Cannon-Bard theory of emotion, emotion-arousing stimuli occur simultaneously with the physiological response. In Marlene's situation, the fear experience occurred at the same time as her physiological response.

   In Schacter's theory of emotion, both our physical responses and our cognitive labels combine to cause an emotional response. In Marlene's situation, after her heart starts to pound and she breaks into a sweat, she assigns the cognitive label of "I'm afraid" and then she labels her reaction as fear.

   In Zajonc's theory of emotion, emotion and cognition are separate. Our interpretation of a situation is slower than our emotional reaction. Our feelings control our thoughts. In Marlene's situation, she knew how she felt before she knew what she thought about the situation. She reacted to her feelings.

   In Lazarus' theory of emotion, emotional responses occur outside of conscious thinking. In Marlene's situation, she reacted without thinking about the situation. She reacted without conscious thought.

Part 4: Long-Answer Questions *(3 x 10 marks = 30 marks)*

On the midterm examination, you will be asked to answer **3 of the 4** long-answer questions presented, each worth 10 marks to a total of 30 marks. Below is an example of a long-answer question.

1. Freud believed that a healthy personality was one that could successfully express pleasure-seeking impulses while avoiding punishment or guilt. For this to happen, sometimes the ego would have to resort to defence tactics that Freud called defence mechanisms. Complete the following chart identifying 5 of the 10 defence mechanisms proposed by Freud *(1 mark each)* and provide a scenario that would be an example of the defence mechanism in action *(1 mark each).* (Module 3, Lesson 5)

Defence Mechanism	Scenario
Repression	**It is used to conceal an event that is causing disturbances; by not recalling the event, the person does not have to deal with its consequences.** **An appropriate scenario would describe having no recollection of an event that reminds you of something you work hard to control in the present.**
Regression	**It allows an anxious person to retreat to a more comfortable, infant-like stage of life.** **An appropriate scenario would describe an action such as thumb-sucking or bedwetting when stressed.**
Denial	**It allows an anxious person to refuse to admit that something unpleasant is happening.** **An appropriate scenario would describe making up a story or lying about an event that has happened.**
Reaction formation	**It reverses an unacceptable impulse causing an anxious person to express the opposite of the anxiety-provoking, unconscious feeling.** **An appropriate scenario would describe denying strong feelings about another person by responding in the opposite way.**

continued

Name: _____

Defence Mechanism	Scenario
Projection	It disguises threatening feelings of guilty anxiety by attributing the problem to others. An appropriate scenario would describe transferring negative or inappropriate feelings onto another person; for example, accusing someone of something that you are feeling but won't admit to.
Rationalization	It replaces real, anxiety-provoking explanations with more comforting justifications for one's actions. It makes mistakes seem reasonable. An appropriate scenario would describe making up a logical excuse for irrational behaviour.
Displacement	It shifts an unacceptable impulse toward a more acceptable or less threatening object or person. An appropriate scenario would describe taking out anger on an inanimate object.
Compensation	It emphasizes personal strengths in one area to shift the focus from failure in another area. An appropriate scenario would describe a person emphasizing positive accomplishments instead of dwelling on failures in life.
Identification	It lets associations with people or groups that are of higher status occur in order to increase your own status. An appropriate scenario would describe an action that makes an insecure person feel more secure; boosting self-confidence.
Intellectualization	It describes painful or emotional personal events in academic terms. An appropriate scenario would describe a person attributing a failure in education-related events to the system rather than themselves.

MODULE 4

Cognitive Psychology

This module is divided into five topics. Each topic will include one or more lessons.

- Topic 1: Learning
  - Lesson 1: Classical Conditioning
  - Lesson 2: Operant Conditioning
  - Lesson 3: Observational Learning
- Topic 2: Memory
  - Lesson 4: Information Processing
- Topic 3: Thinking and Language
  - Lesson 5: Thinking and Language
- Topic 4: States of Consciousness
  - Lesson 6: Body Rhythms, Sleep, and Dreams
  - Lesson 7: Hypnosis and Meditation
  - Lesson 8: Drugs and Dependency
- Topic 5: Intelligence
  - Lesson 9: Intelligence
- Module 4 Summary
- Module 4 Learning Activity Answer Key

L ESSON 1: C LASSICAL C ONDITIONING

Lesson Introduction

One of the greatest gifts we have as humans is our ability to learn. Learning is defined as a relatively permanent change in behaviour or knowledge due to experience. One of the ways that we do this is by association. This means that we connect events together.

Have you ever thought about why your dog drools when you open a can of food, why you tremble when you hear the dentist's drill, or why you blush before you are called upon to give a speech in class?

Association could involve two different stimuli (lightning and thunder) or a response and its consequences (crying and being comforted).

The process of learning associations between environmental events and behavioural responses is called conditioning.

There are three basic types of learning. They are:

- classical conditioning
- operant conditioning
- observational learning

In this lesson, you will learn about classical conditioning, its principles or components, its processes, how it came to be, and how this type of learning is used in our everyday lives.

What is Classical Conditioning?

Classical conditioning is a form of learning by association between two stimuli. A stimulus is anything in the environment to which one can respond.

For instance, if you are in the shower and someone flushes the toilet, you know what might happen. The cold water goes to the toilet and the shower temperature momentarily turns hot enough to scald. You jump aside to get out of the hot water.

Let's say that every time someone flushes when you are in the shower they yell the word "flush" before the hot water hits you. You would naturally jump aside so that you wouldn't get scalded. If this happened repeatedly, you would jump aside every time you heard the word "flush". Hence, you would be classically conditioned.

Components of Classical Conditioning

There are many components to classical conditioning. Think of the word conditioned as meaning learned and the word unconditioned as meaning unlearned.

- An unconditioned stimulus (UCS) is a stimulus that triggers a response either automatically or as a reflex. For example, scalding hot water in a shower would make anyone jump out of the way. The hot water is the UCS for jumping.

- An unconditioned response (UCR) is the response to the UCS. For example, jumping aside is the UCR for the UCS of hot water. No learning has occurred here. It is a reflex.

- A conditioned stimulus (CS) is something that once was neutral. In our example, the word "flush" normally doesn't make you jump aside. Through learning by classical conditioning, if we pair the word "flush" with the onset of the hot water, then this will produce a behaviour—jump aside. This neutral stimulus now has the power to cause a response.

- A conditioned response (CR) is the response to the conditioned stimulus. It is exactly the same behaviour as the UCR, but they have different causes. One is a reaction to the biological stimulus while the other is a learned reaction to a signal. In our example, jumping aside is the CR.

The idea of classical conditioning came from Ivan Pavlov and his experiments with salivating dogs.

Ivan Pavlov's Discovery

Pavlov was a Russian medical doctor. He noticed that when he put food in a dog's mouth, the dog began to salivate. He also noticed that the dog began salivating at the sight of the food. He designed experiments to investigate what would happen if he paired a neutral stimulus (a light, a buzzer, a touch on the leg) with an unconditioned stimulus (food). After repeated pairings, the neutral stimulus alone produced salivation.

Let's look at his experiment.

UCS (food) ⟶ UCR (salivation)
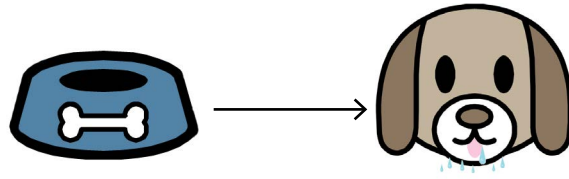
NS (tone) ⟶ No salivation
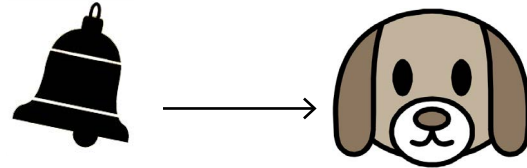
NS (tone) + UCS (food) ⟶ UCR (salivation)
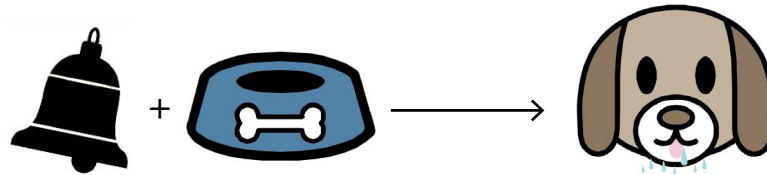
CS (tone) ⟶ CR (salivation)
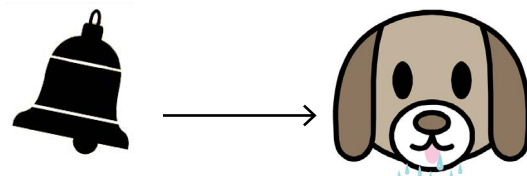
Learning Activity 4.1: Classical Conditioning

Read the following situations and identify the following:

- UCS: unconditioned stimulus

- UCR: unconditioned response

- NS: neutral stimulus

- CS: conditioned stimulus

- CR: conditioned response

1. Your dog comes running when he hears the electric can opener.

   UCS: unconditioned stimulus: _____

   UCR: unconditioned response: _____

   NS: neutral stimulus: _____

   CS: conditioned stimulus: _____

   CR: conditioned response: _____

2. While listening to your car radio, you accidentally rear-end a blue car in front of you. Now, every time you see a blue car, your heart starts to race.

   UCS: unconditioned stimulus: _____

   UCR: unconditioned response: _____

   NS: neutral stimulus: _____

   CS: conditioned stimulus: _____

   CR: conditioned response: _____

Check the answer key.

Classical Conditioning Processes

Pavlov identified five major conditioning processes:

- acquisition
- extinction
- spontaneous recovery
- generalization
- discrimination

Acquisition

The first stage of classical conditioning is called acquisition. It occurs when a neutral stimulus (NS) is paired with an unconditioned stimulus (UCS). Every time the two are paired, it is called a trial.

In our example with the shower, we would pair the word "flush" (NS) with the hot water (UCS). When you jump aside upon merely hearing the word, then acquisition or learning has occurred. The conditioned response (CR) will be maintained only if the word "flush" continues to be paired with the hot water on some trials.

UCS (hot water) $\longrightarrow$ UCR (jump aside)

NS (word) + UCS (hot water) $\longrightarrow$ CR (jump aside)

CS (word) $\longrightarrow$ CR (jump aside)

What happens when the CS occurs repeatedly without a UCS? That is when the word "flush" is not followed by hot water or, in Pavlov's experiment, the tone is not followed by food. The process of extinction occurs.

Extinction and Spontaneous Recovery

Extinction occurs when a conditioned stimulus (CS) no longer produces or elicits a conditioned response (CR). The word "flush" doesn't cause you to jump aside in the shower and the dogs don't salivate when they hear a tone.

It is important to note that after a rest period, a CR can reappear. This is called spontaneous recovery. The CR reappears even though it is weaker.

Generalization and Discrimination

Pavlov noticed that a dog that is conditioned to one tone will also respond to similar sounding tones. He called this process generalization. It is the tendency to respond to stimuli that are similar to the CS.

Pavlov's dogs also learned to respond to the sound of a particular tone and not others. He called this process discrimination. It is the learned ability to distinguish between different stimuli.

Classical Conditioning in Everyday Life

Many responses in our everyday life can be and have been classically conditioned. Let's look at four examples. If you repeatedly pair the UCS and the NS, then the NS will become the CS and, all by itself, will give you the response.

Neutral stimulus	Unconditioned stimulus	Response
A toy appears.	A baby hears a loud, unfamiliar noise.	The baby cries or gets scared.
A light flashes.	A hand is raised to slap your face.	You flinch.
A door slams.	You put your hand on a lit candle.	You yell and move your hand.
The teacher taps a pencil.	Your teacher yells at you.	You get quiet.

Eventually, the neutral stimulus, which is now the conditioned stimulus, will give you the response.

Emotions can also be classically conditioned. John Watson, an American psychologist, demonstrated that fears could be explained by the principles of classical conditioning. He did this by intentionally establishing a fear of rats in an eleven-month-old boy named Albert. They paired a white rat (NS) with a loud noise (UCS). Eventually, the sight of the rat alone produced fear. Watson was able to demonstrate generalization because Albert feared furry white toys. He was also able to demonstrate discrimination because Albert didn't fear all toys. This experiment could never be conducted today because of the ethical guidelines that are set by the American Psychological Association. The guidelines for human and animal research were explained in Module 1.

Taste aversion can also be classically conditioned. The research of John Garcia and Robert Koelling showed how avoidance of certain tastes could develop through classical conditioning. On experiments with rats, they discovered that it was possible to use a nausea-producing drug or radiation as a UCS. By pairing that with any food, in time, the food alone produced the feeling of nausea.

Role of Cognition and Biology

Cognitive processes and biology are both involved in classical conditioning.

It was once believed that conditioning was the same in all animals. This meant that you could study human behaviour by studying any animal and that you could associate any neutral stimulus with a response. This is, however, not true. Animals have biological predispositions to associating certain stimuli over others.

For example, you eat a new food and later get sick. You will be conditioned to associate the taste of the food with getting sick (and thus avoid that food in the future). You don't avoid the type of music that was playing in the restaurant, the type of plate it was served on, or the perfume that your neighbour was wearing.

Lesson Summary

Learning is any relatively permanent change in behaviour or thinking that is due to experience. Classical conditioning is one type of learning by association. In this lesson, the components of classical conditioning were explained. They include the following:

- unconditioned stimulus
- unconditioned response
- neutral stimulus
- conditioned stimulus
- conditioned response

The processes of classical conditioning were also explained. These include the following:

- acquisition
- extinction
- spontaneous recovery
- generalization
- discrimination

The research of Pavlov, Watson, and Garcia and Koelling was explained to illustrate classical conditioning.

Notes

Assignment 4.1: Applying Classical Conditioning (22 marks)

1. Describe a learned food aversion that you or someone you know has experienced. *(1 mark)*

   _____

   _____

   _____

   Show how the principles of classical conditioning (UCS, UCR, NS, CS, and CR) apply to this food aversion. *(5 marks)*

   UCS: _____

   UCR: _____

   NS: _____

   CS: _____

   CR: _____

   In paragraph form, explain the processes of classical conditioning with respect to this food aversion. Include the words acquisition, extinction, spontaneous recovery, generalization, and discrimination in your answer. *(5 marks)*

   _____

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2. Describe a fear or phobia that you or someone you know experiences. *(1 mark)*

   _____

   _____

   _____

continued

Assignment 4.1: Applying Classical Conditioning (continued)

Show how the principles of classical conditioning (UCS, UCR, NS, CS, and CR) apply to this fear or phobia. *(5 marks)*

UCS: _____

UCR: _____

NS: _____

CS: _____

CR: _____

In paragraph form, explain the processes of classical conditioning with respect to this fear or phobia. Include the words acquisition, extinction, spontaneous recovery, generalization, and discrimination in your answer. *(5 marks)*

_____
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Marking Rubric

1. Provides description of the food aversion: 1 mark
2. Correctly identifies the UCS, UCR, NS, CS, and CR: 5 marks
3. Correctly explains each of the following:
   a. acquisition: 1 mark
   b. extinction: 1 mark
   c. spontaneous recovery: 1 mark
   d. generalization: 1 mark
   e. discrimination: 1 mark

LESSON 2: OPERANT CONDITIONING

Lesson Introduction

In this lesson, you will learn about another form of associative learning called operant conditioning. The experiments of B.F. Skinner will be discussed and the concepts of reinforcement and punishment will be explored. Different procedures for using reinforcement as well as the timing of reinforcement will also be explained.

The lesson ends with scenarios of the two types of learning covered so far in this module: classical conditioning and operant conditioning.

What is Operant Conditioning?

Operant conditioning is a form of associative learning, like classical conditioning, except that in operant conditioning there is an association with consequences. In the last lesson on classical conditioning, there was an association between two events.

Operant conditioning always involves behaviour that is either reinforced or punished. One of the first people to study this kind of learning was Edward Thorndike.

The Law of Effect

Thorndike conducted a series of experiments using a cat in a puzzle box. The hungry cat was locked in a cage next to its food. The cat had to get out of the cage in order to get to the food. He found that, in time, the cat learned the new behaviour by connecting the stimulus with the response.

| Figure 4.1 | **Thorndike's Puzzle Box** |

Figure 4.1: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 320.

He put forth the Law of Effect which states that:

- If the consequences of the behaviour are pleasant, the stimulus-response connection will be strengthened and the likelihood of the behaviour will increase.
- If the consequences of the behaviour are unpleasant, the stimulus-response connection will weaken and the likelihood of the behaviour will decrease.

Thorndike's work set the stage for the work of B.F. Skinner. In his studies, he designed a chamber, called a Skinner box. The box had a bar or button that an animal pressed to release food or water.

Figure 4.2   **Skinner Box**

Operant chamber for rats
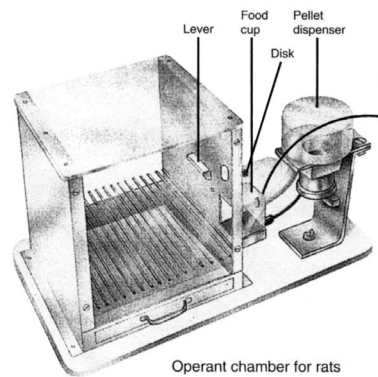
Two important concepts used by Skinner in operant conditioning are reinforcement and punishment.

- Reinforcement is any consequence that increases the likelihood of a specific behaviour.
- Punishment is any consequence that decreases the likelihood of a specific behaviour.

Reinforcement

There are many types of reinforcement and there are also many schedules of reinforcement. This refers to whether the reinforcement should happen continuously or partially. Let's begin with types of reinforcement.

Reinforcement can be

- positive or negative
- immediate or delayed
- primary or secondary

Figure 4.2: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 321.

Remember that reinforcement strengthens a behaviour making it more likely to occur again.

Positive reinforcement occurs when a specific behaviour is followed by a desirable event or state (something that is desired). Two examples of positive reinforcement are

- praising a dog that comes when it is called
- paying a person for building a fence in your yard

Negative reinforcement occurs when a specific behaviour ends in an undesirable event or state (something that is undesired). Two examples of negative reinforcement are

- ending a headache by taking an aspirin
- putting up an umbrella to get out of the rain

Immediate reinforcement occurs right after the behaviour. Two examples are

- praising the dog right when it comes
- paying the fence builder as soon as the job is completed

Delayed reinforcement occurs some time after the behaviour. Two examples are

- praising the dog for coming five minutes after he comes over
- paying the fence builder one week after the job is completed

Primary reinforcement involves something that is biologically reinforcing, such as food, warmth, or water. Two examples are

- giving the dog a biscuit when it comes
- giving the fence builder a cold glass of water when he's thirsty

Secondary reinforcement, also called conditioned reinforcement, involves something that you have learned to value, such as money. Two examples are

- patting the dog when he comes
- paying the fence builder

As you can see, there are many types of reinforcement. Which is more effective?

- Both positive and negative reinforcement are equally effective.
- We are more likely to respond to immediate reinforcement rather than delayed reinforcement; however, we can't always be rewarded or reinforced right away. As humans, we must learn to delay being rewarded.

Such examples include receiving the passing grade at the end of the course and getting a paycheque at the end of a two week period.

- Research has shown that the ability to delay gratification has an advantage. Children who prefer a big reward tomorrow over a smaller reward today become higher achieving adolescents.

If reinforcement increases the likelihood of a behaviour occurring in the future, then what decreases the likelihood of a behaviour occurring in the future? The answer is punishment.

Punishment

Punishment weakens a behaviour making it less likely to occur again in the future. There are two different types of punishment.

1. The behaviour is followed by an undesirable event.

   For example, if a young child touches a hot stove, the burn on the hand is the punishment. This punishment makes the behaviour less likely to occur in the future.

2. The behaviour is followed by the ending of a desirable state or event. This type of punishment is also called omission training. In school, we call this time out.

   For example, if I get repeated speeding tickets, I lose the privilege of driving. Likewise, a young child who is hitting his classmates is removed from the classroom to a time out room.

Research has shown that reinforcement is effective but how effective is punishment?

Problems with Punishment

Many learning experts oppose the use of punishment in controlling behaviour. Some of the reasons are as follows:

- Sometimes, punishment doesn't end the undesired behaviour; it only suppresses it. The punished person avoids doing the behaviour if they will get caught.
- Sometimes, punishment can teach aggressive behaviour because we tend to repeat behaviours that we observe.
- Sometimes, punishment can lead to fear, anxiety, and lower self-esteem because frequently punished children or animals learn to avoid.

Learning Activity 4.2: Reinforcement and Punishment

For each example below, identify whether positive reinforcement (PR), negative reinforcement (NR), or punishment (PUN) is illustrated by placing the appropriate abbreviation in the blank next to the item. The first three questions have been completed for you.

Consider the following information when completing this learning activity:

- **Positive reinforcement** occurs when a specific behaviour is followed by a desirable event or state (something that is desired).

- **Negative reinforcement** occurs when a specific behaviour ends an undesirable event or state (something that is undesired).

- **Punishment** is any consequence that decreases the likelihood of a specific behaviour. Punishment weakens a behaviour making it less likely to occur again in the future.

1. The police pull drivers over and give out prizes for buckling up. __PR__

    This is an example of positive reinforcement because the behaviour of wearing a seat belt is rewarded with a prize.

2. A basketball player is suspended for committing a foul. __PUN__

    This is an example of punishment because suspension is a consequence that will decrease the likelihood that the player will commit a foul again.

3. A child snaps her fingers until her teacher calls on her. __NR__

    This is an example of negative reinforcement because the behaviour of the teacher calling on the student ends the undesirable behaviour of the child snapping her fingers.

4. A soccer player rolls her eyes at a teammate who delivered a bad pass. _____

5. A hospital patient is allowed extra visiting time after eating a meal. _____

6. A person receives a discount for participating in a recycling program. _____

7. A teenager is grounded until his or her homework is finished. _____

8. A child is scolded for playing in the street. _____

9. A prisoner loses television privileges for one week because of a rule violation. _____

10. A father nags his daughter to clean up her room. _____

11. A rat presses a lever to terminate a shock or a loud tone. _____

12. A teacher gives extra credit to students with perfect attendance. _____

13. A dog is sent to his doghouse after soiling the living room carpet. _____

14. A defendant is harassed until he confesses. _____

15. A young child receives $5 for earning good grades in school. _____

16. A mother smiles when her child utters "Mama". _____

17. A child is given a "time-out" for misbehaving. _____

18. The employee of the month gets a reserved parking space. _____

19. A husband becomes jealous when his wife flirts with his friend. _____

20. A mother offers her child candy to play quietly. _____

Check the answer key.

Reinforcement Procedures

In operant conditioning, like in classical conditioning, there are procedures that can be applied to reinforce a specific behaviour, making the behaviour more likely to occur in the future. Three of these procedures are shaping (or acquisition), discrimination, and extinction.

Figure 4.3	**Acquisition and Extinction**
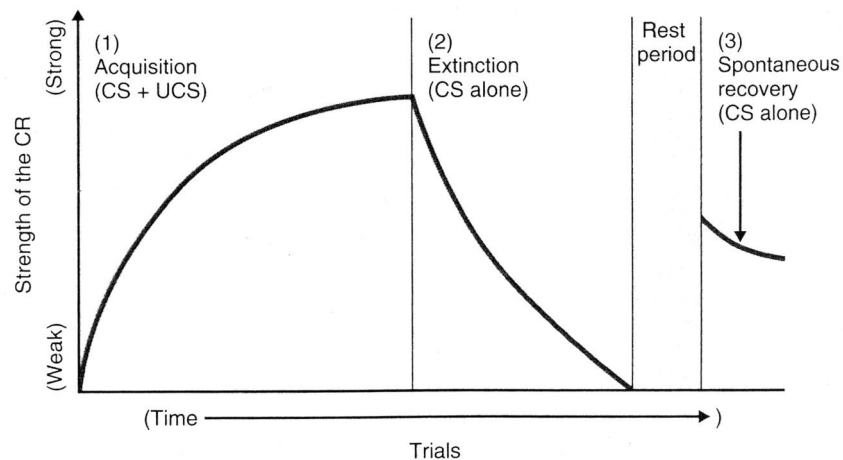
1. Shaping

Shaping is a technique or procedure that is used to establish new behaviour. It involves gradually reinforcing closer and closer approximations of the desired behaviour. In everyday life, we are always shaping the behaviour of others or having our behaviour shaped.

An example is when you learned to drive a car. You were reinforced for turning the car on, then driving forward a few metres, then putting on the turn signal, then taking the first right-hand turn, then taking the first left-hand turn, and so on. Your driving behaviour was being shaped.

Shaping is useful in training specific behaviour. But, how do we learn to behave differently when presented with similar stimuli and how do we get rid of behaviours that we have learned? The answer lies in the procedures of discrimination and extinction.
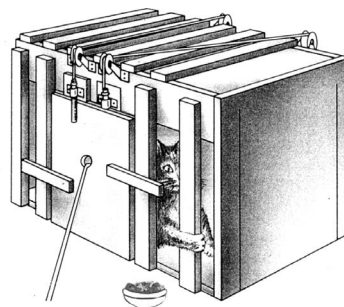
Figure 4.3: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 314.

2. Discrimination

Discrimination is the ability to tell the difference between two similar stimuli. If you can't tell the difference, it is called generalization.

For example, you know the difference between class bells and fire alarm bells, human cookies and dog biscuits, and your friends Jessica and Sarah.

3. Extinction

Extinction is the loss of a specific behaviour when no consequence follows it. This is sometimes a good thing because it prevents us from repeating the same unsuccessful behaviours.

A few examples are making flirtatious comments to someone who is not interested in us and making an egg salad sandwich for someone who doesn't eat eggs.

Let's look at two other examples of extinction that show how it can be used to change a child's bad behaviour.

- A child is lying in bed while his parents are in the living room talking to guests. The child begins to make loud noises to get their attention. The child's behaviour becomes extinct because the parents ignore the child and continue to talk to their guests.
- A child is having dinner with her parents and at the end of the meal she yells loudly for dessert. The parents continue talking and ignore their daughter's demands. After a short period of time, the child is served dessert.

Learning Activity 4.3: Reinforcement

Six everyday situations, in which some form of operant behaviour is occurring, are provided. After reading each scenario, indicate whether it is an instance of **generalization** or **discrimination**.

1. We stop our vehicles when the traffic light is red but we continue through the light when it is green. _____

2. We sit quietly in our seats during class examinations, church services, theatrical presentations, and funerals. _____

3. We raise our hands before speaking in class but not while talking to a friend or while at a party. _____

4. We put our feet up on our desk and coffee table at home, but not on our grandparents' coffee table. _____

5. We mistake a stranger for a friend of ours. _____

6. We answer the doorbell when it was really the phone that was ringing. _____

Check the answer key.

Schedules of Reinforcement

For a specific behaviour to continue, the behaviour needs to be reinforced continuously or partially. These are called schedules of reinforcement.

Skinner and others have identified different types of reinforcement schedules.

- In **continuous reinforcement**, you reward every correct response.
- In **partial reinforcement**, you reward only some correct responses.

Partial reinforcement schedules are further broken down into ratio schedules and interval schedules.

- **Ratio schedules** focus on the number of responses before reinforcement occurs.
- **Interval schedules** focus on the time between reinforcements.

Ratio and interval schedules can be either fixed or variable. If we put together all the information on schedules, we end up with four different partial reinforcement schedules. Let's look at each one separately.

- **Fixed ratio schedules** provide reinforcement after a set number of responses.
- **Variable ratio schedules** provide reinforcement after an unpredictable number of responses.
- **Fixed interval schedules** provide reinforcement after a set period of time has passed.
- **Variable interval schedules** provide reinforcement after an unpredictable amount of time has passed.

Let's look at the following examples to determine the type of partial reinforcement schedule.

- A person receives a paycheque every other week.
  Fixed interval
- Pop quizzes are administered to students.
  Variable interval
- People play slot machines at gambling casinos.
  Variable ratio
- You call the mechanic to find out if your car is fixed yet.
  Variable interval
- A factory worker is paid every time he finishes three pairs of pants.
  Fixed ratio
- When fly fishing, you must cast and reel back several times before catching a fish.
  Variable ratio
- During a class, you look at your watch until the end of the class.
  Fixed interval
- A salesperson is paid based on commission.
  Fixed ratio
- You call a friend and get a busy signal.
  Variable interval

Before we move on to the next topic, let's look at the role of cognition and biology in operant conditioning.

Role of Cognition and Biology

Cognitive Processes

Skinner believed that all consequences that follow behaviours will determine how often those behaviours occur. He also believed that behaviours that are not rewarded will disappear. However, this is not always the case. Behaviour sometimes occurs without being rewarded. This is called latent learning. You only know that the learning has occurred if there is an incentive at a later time to demonstrate the behaviour. Our thinking affects our learning. There seems to be a connection between external rewards and internal cognitive factors.

Role of Biology

Like cognition, biology also influences how and what we learn. Some species are biologically predisposed to learn some behaviours more easily than other behaviours.

For example, you can condition a hamster to dig or stand on its back legs because these behaviours are natural food-searching behaviours. You can condition pigeons to flap their wings in order to avoid shock and to peck in order to obtain food. This is because flying with the use of their wings and eating with the use of their beaks are natural pigeon behaviours.

Classical Conditioning versus Operant Conditioning

Before we end this lesson, let's look at some situations to determine whether classical conditioning or operant conditioning was involved.

1. Your father gives you a credit card at the end of your first year in college because you did so well. As a result, your grades continue to get better in your second year.

    Is this an example of classical conditioning or operant conditioning?

    This is an example of **operant conditioning** because school performance is a voluntary behaviour.

    - The credit card is a positive reinforcement because it is given and it increases the behaviour.

2. Your car has a red, flashing light that blinks annoyingly if you start the car without buckling the seat belt. You become less likely to start the car without buckling the seat belt.

   Is this an example of classical conditioning or operant conditioning?

   This is an example of **operant conditioning** because buckling a seat belt is voluntary.
   - The flashing light is a punishment.
   - The consequence is given.
   - The behaviour of not buckling the seat belt decreases.

3. You eat a new food and then get sick because of the flu. However, you develop a dislike for the food and feel nauseated whenever you smell it.

   Is this an example of classical conditioning or operant conditioning?

   This is an example of **classical conditioning** because nausea is an automatic response.
   - The flu is the US.
   - The nausea is the UR.
   - The new food is the CS.
   - The nausea to the new food is the CR.

4. An individual receives frequent injections of drugs which are administered in a small examination room at a clinic. The drug itself causes increased heart rate; however, after several trips to the clinic, simply being in a small room causes an increased heart rate.

   Is this an example of classical conditioning or operant conditioning?

   This is an example of **classical conditioning** because the increased heart rate is an automatic response.
   - The drug is the UCS.
   - The accelerated heart rate is the UCR.
   - The small room is the CS.

5. A lion in a circus learns to stand up on a chair and jump through a hoop to receive a food treat.

   Is this an example of classical conditioning or operant conditioning?

   This is an example of **operant conditioning** because standing on a chair and jumping through a hoop are voluntary behaviours.
   - The food treat is a positive reinforcement because it is given and it increases the behaviour.

6. A teacher has a policy of exempting students from the final exam if they maintain perfect attendance during the semester. His students' attendance increases dramatically.

   Is this an example of classical conditioning or operant conditioning?

   This is an example of **operant conditioning** because attendance is a voluntary behaviour.

   ■ The exemption from the final exam is a negative reinforcement because the students are being removed from writing the final.

7. You check the coin return slot on a pay telephone and find a quarter. You find yourself checking other telephones over the next few days.

   Is this an example of classical conditioning or operant conditioning?

   This is an example of **operant conditioning** because checking the coin return slot is a voluntary behaviour.

   ■ The quarter would be a positive reinforcement because it was given and it led to an increase in the behaviour.

8. Your hands are cold so you put your gloves on. In the future, you are more likely to put gloves on when it's cold.

   Is this an example of classical conditioning or operant conditioning?

   This is an example of **operant conditioning** because putting gloves on is a voluntary behaviour.

   ■ The consequence is a negative reinforcement because the coldness is taken away and the behaviour of putting on gloves increases.

Lesson Summary

This lesson covered operant conditioning which is a type of learning in which the frequency of a specific behaviour depends on its consequence. The research of Thorndike and Skinner was presented.

Different types of reinforcement and punishment, as well as the principles of shaping, discrimination, and extinction were discussed. Many different reinforcement schedules were explained.

The role of cognition and biology were also explored.

Learning Activity 4.4: Operant Conditioning

Use the terms presented in the lesson to answer the following two questions in paragraph form.

1. Your neighbour can't understand why yelling at her ten-year-old son for misbehaving only seems to make the problem worse. Using what you know about operant conditioning, what advice would you give your neighbour about how she might reduce her son's disruptive behaviour and how she might encourage more appropriate behaviour.

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2. You have just adopted a puppy. Using what you know about operant conditioning, how could you train your puppy to be obedient and do some neat tricks?

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Check the answer key.

LESSON 3: OBSERVATIONAL LEARNING

Lesson Introduction

You have thus far examined two types of learning in this module—classical conditioning and operant conditioning. In this lesson, you will learn about observational learning which is learning that takes place by watching or observing others. As you are well aware, people and animals learn many things from watching others. You will learn about the research of Albert Bandura. The lesson will end with a look at the pro-social (positive) and anti-social (negative) effects of observational learning and a look at the effects of exposure to violence in the media.

Albert Bandura and Observational Learning

Observational learning is learning that takes place by watching others. It is different than the other two types of learning presented in this module in that another person (the model) actually repeats behaviour that the learner observes and imitates. This process is called **modeling**. Using the hot stove example from the last lesson, a child who sees his sister burn her hand on the hot stove learns not to touch the stove by observational learning.

It appears that the brain has neurons called **mirror neurons** that fire when we perform certain actions or observe others performing actions. For example, in a study with monkeys, when the monkey grasped and held a branch, the neurons would fire or become active. They also became active when the monkey observed another monkey performing the same task. The same thing happens in humans. This helps to explain why we have the ability to pick up on clues as to how others are feeling.

Children see, children do. The imitation of models shapes even very young childrens' behaviour. Developmental psychologists have shown that, shortly after birth, a baby may imitate an adult who sticks out his tongue. By nine months of age, infants imitate new behaviours and by fourteen months of age, children imitate what they see on television. We will discuss the effects of television later in the lesson.

The pioneering researcher of observational learning was Albert Bandura. In one of his experiments, the researchers arranged for a young child to be playing in a room that also had an adult in it who was behaving aggressively toward an inflatable doll. At the same time, the adult was shouting out comments.

The next step of the experiment was to see what the child who observed the adult would do if left alone with the doll. Can you guess what happened? That child exhibited more aggression than children who had not observed an aggressive adult model—the control group. Bandura also found that the children imitated the exact words and behaviours of the adults that they observed.

Figure 4.4   **Observational Learning Experiment**

Photo Credits: Courtesy Dr. Albert Bandura, Stanford University

Figure 4.4: Zimbardo, Philip G., and Richard J. Gerrig. Psychology and Life. 14th ed. New York, NY: HarperCollinsCollegePublishers, 1996. 338.

Bandura was also interested in the effects that seeing consequences delivered to the model would have on the children. We know that good and bad consequences affect how and what we learn. But, what impact does watching someone else receive the consequence have on our behaviour?

In another of Bandura's experiments, he showed video clips to children of an aggressive adult hitting the doll. The ending to the videos, however, were different. Some children saw the adult rewarded with praise, some saw the adult spanked, and some saw the adult receive neither a reward nor a punishment.

Once again, the children were left alone with the doll. The children who saw the model rewarded for aggression behaved more aggressively than the other two groups of children. Bandura called this vicarious learning. This is learning by seeing the consequences of another person's behaviour.

Bandura's research leads us to make some conclusions about learning from watching others. In order for learning to take place, the following four conditions must be met.

1. Attention: To learn you must be aware of the behaviours of those around you.
2. Retention: You must remember the behaviour that you observed.
3. Reproduction: You have to have the ability to reproduce the behaviour.
4. Motivation: You have to feel motivated to learn the behaviour.

We observe the models in our everyday life—our family, friends, teachers, and neighbours, as well as people we see on television—and we learn from them. Whether we like it or not, it is impossible to choose not to be a role model. You have no control over this. You do, however, have control over the type of role model that you are. The good and bad news is that role models can have pro-social (positive) effects or anti-social (negative) effects.

Pro-social Effects

Models who are positive and helpful—in other words, they engage in pro-social behaviour—can prompt similar behaviour in others.

For example, Gandhi and Martin Luther King Jr. both modeled non-violence. Similarly, charity campaigns in schools are effective when even a few students spearhead projects to help those in need.

Anti-social Effects

Models who are negative, destructive, and unhelpful, in other words, they engage in anti-social behaviour, can also prompt similar behaviour in others.

Typical teenagers spend more time watching television, playing video games, and surfing the Internet than they do in school. With all of the violence portrayed in these forms of media, we wonder whether being exposed to this violence affects children.

Questions still remain about whether or not

- there was an increase in the homicide rates in Canada and the United States when television was first introduced in the late 1950s
- elementary school children who are heavily exposed to watching violence in the media also tend to get into more fights
- the more children watch violence, the more accepting they are of aggressive attitudes and behaviours
- our concept of how we believe others live is affected by being exposed to violence in the media
- there has been an increase in the violence against women and against ethnic minorities in the media

We are all exposed to the media—television, Internet, newspapers, magazines, video games, movies—as a means of observing others. These media forms have role models demonstrating both pro-social and anti-social behaviours.

We also observe and imitate the role models that are not in the media. Remember that you are a role model for others. What kind of role model are you to others and what kind of role model are you choosing to imitate?

Lesson Summary

In this lesson, you learned about observational learning (learning that takes place from watching others). The research of Albert Bandura involving the inflatable doll was presented. The lesson ended with a look at the pro-social (positive) and anti-social (negative) effects of observational learning with a focus on what is learned by exposure to violence in the media.

Assignment 4.2: Applying Learning to Your Life (20 marks)

Think about how learning has applied to your life. Answer the following questions.

1. Food aversion, phobia, or fear (Classical Conditioning) *(6 marks)*

   a. Think of a time when you have experienced a food aversion, phobia, or fear that was developed through an experience. Briefly explain the experience.

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

   b. Apply that experience to the following concepts:

   UCS _____

   UCR _____

   NS _____

   CS _____

   CR _____

2. Emotional experience (Classical Conditioning) *(6 marks)*

   a. Think of a time when you have experienced an emotional response to something (song, smell, or other item) based on a previous experience. Briefly explain that experience.

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

continued

Assignment 4.2: Applying Learning to Your Life (continued)

b. Apply that experience to the following concepts:

UCS _____

UCR _____

NS _____

CS _____

CR _____

3. Childhood learning experience (Operant Conditioning) *(3 marks)*

a. Think of a time when you learned something from your parents or teacher. Briefly explain that experience.

_____

_____

_____

_____

_____

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_____

b. Explain the specific type of reinforcement or punishment that was used to teach you.

_____

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_____

c. Apply the specific schedule of reinforcement that applied in that experience.

_____

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_____

continued

Assignment 4.2: Applying Learning to Your Life (continued)

4. Childhood or adolescence learning experience (Observational Learning) *(5 marks)*

    a. Think of a time when you learned something through observing someone else. Briefly explain that experience.

    _____
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    _____
    _____
    _____

    b. Apply the four conditions of observational learning to that experience.

    Attention: _____
    _____
    _____
    _____

    Retention: _____
    _____
    _____
    _____

    Ability to reproduce behaviour: _____
    _____
    _____
    _____

    Motivation: _____
    _____
    _____
    _____

Notes

L E S S O N   4 :   I N F O R M A T I O N   P R O C E S S I N G

Lesson Introduction

Memory is learning that we retain over time. You can remember voices, faces, places, events, smells, sounds, tastes, songs, and even what you learned in Module 1, Lesson 1. How can you do this? How can you remember things that you have not thought about for a long time and yet not remember something that just happened?

In this lesson, you will learn what causes you to remember what you remember, and forget what you forget. The lesson will look at how memories are processed from encoding (getting information in) to storage (keeping the information there) to retrieval (getting the information out).

You will also learn some ways to improve your own memory.

The lesson will end with a discussion on how memory can fail and be inaccurate.

Information Processing Model

One explanation or model of how memory works was developed by Richard Atkinson and Richard Shiffrin. They called their model the **Information-Processing Model**. They believe that the process that we use involves three stages. In order to remember an event, we must

1. get information into our brain—a process called **encoding**
2. retain that information—a process called **storage**
3. get the information back out—a process called **retrieval**

Other psychologists have added to this process by suggesting that the first step is a split-second encoding of **sensory memory** (all the sensory information in the memory system).

From there, we process some of the information into what is called **short-term memory (STM)**. This part of our memory system holds a few pieces of information briefly before the information is stored or forgotten.

From short-term memory, some information moves into **long-term memory (LTM)** for later retrieval.

Encoding

Encoding is the process in which you move information into your memory. It can be done automatically or with some effort.

- **Automatic processing** is done unconsciously, without thinking about it. The things that we automatically process include space, time, frequency, and well-learned word meanings.
  - Space: where things are in relation to you
  - Time: the sequence of events
  - Frequency: how many times things happen
  - Word meaning: when you see words that you know, you don't stop and think about what they mean

- **Effortful processing** requires attention and conscious effort. This is how we remember new and important information. By paying close attention and putting in effort, we can often produce long-lasting memories.

There are many ways to increase your memory of new information. Through rehearsal, you can encode information for storage. **Rehearsal** means conscious practice. Have you heard the phrase "practice makes permanent"? The amount that we remember depends on the time spent learning.

Even if you think you know something well, additional rehearsal, called **overlearning**, will increase what you have learned. This is one of the best ways to make sure you know something, especially when you are in a stressful situation like an exam.

We tend to remember information better if we rehearse over a period of time. This is called the **spacing effect**. It is better to study on a regular basis than to pull an all-nighter just before your exam. Spreading out learning helps you to remember it in the future.

Imagine that you rehearsed the information that you had to learn every night for weeks before the big exam. You have to learn lists of items for this exam. You can remember the first things on the list and the last things on the list; however, you are having trouble remembering the middle items. This is because the position of an item on a list influences our memory of that item. This is called the **serial position effect**. It is our tendency to remember the first and last items in a list.

- When you remember the items near the beginning, it is called the **primacy effect**.
- When you remember the items at the end, it is called the **recency effect**.

When you are rehearsing lists, you have to spend extra time on the middle items.

Next time you go to the grocery store without a list, see which items you remember to purchase and which items you forget. Also, see what happens the next time you are introduced to ten new people at the same time. Which names do you remember and which names do you forget?

Processing information is kind of like sorting through the mail, email, and text messages that we receive every day; some of it is junk mail, some of it we need to read and remember for a short period of time, and other information we need to retain for a longer period of time. To help us do this, we need to encode meaning and images, use memory tricks or techniques called mnemonic devices, and organize the information for later storage and retrieval.

Encoding Meaning

You need to make what you want to remember meaningful. This is the process of **semantic encoding**. Research has shown that if you encode information according to meaning, rather than encoding visually or acoustically, you remember the information more effectively.

A good way to add meaning to material is to use the **self-reference effect**. This means that you relate the information to your own life making it personally relevant.

The material in this course should be easy to learn and remember because it is all about behaviour and mental processes as they relate to you.

Encoding Imagery

We can also remember things that lend themselves to forming a visual image. We tend to encode images of the high points in our life and of the catastrophes. Those of us who are of a certain age can all still remember the visual images of 9/11. We remember where we were, what we were doing, who we were with, and so forth.

Mnemonic Devices

Since we encode visual images fairly well, we can use a variety of tricks or techniques called **mnemonic devices** to help us remember. Three common mnemonic devices are

- acronyms
- method of loci
- peg-word system

Acronyms

You make an acronym by taking the first letter of the words that you need to remember. For example, to remember the names of the Great Lakes, use the acronym HOMES (Huron, Ontario, Michigan, Erie, and Superior). To remember the colours of the visual spectrum, use Roy G Biv (red, orange, yellow, green, blue, indigo, violet). You can make up acronyms for any information.

Method of Loci

In the method of loci, you associate items that you want to remember with places in your imagination. Let's say you have a speech to memorize. You can imagine different parts of the speech taking place in different locations in your house. When it comes time to deliver your speech, all you have to do is take an imaginary walk through your house.

Peg-Word System

In the peg-word system, you must first learn a list of peg words or phrases on which to hang the items that you want to remember. The simplest list of peg words is as follows:

- One is a bun
- Two is a shoe
- Three is a tree
- Four is a door
- Five is a hive
- Six is a pile of sticks
- Seven is heaven
- Eight is a gate
- Nine is a line
- Ten is a hen

The next step is to create an image of the first item you need to remember and a bun, the second item and a shoe, the third item and a tree, and so on. When it comes time to remember your list in order, you think of one, then bun, then the item you had to remember. The more unusual you make the image, the easier it will be to remember it, even weeks later.

Organizing Information

Another way to encode information effectively is to organize it into groups of meaningful units. This is called **chunking**. Many mnemonic devices are really examples of chunking.

You can also organize information into a **hierarchy**. Hierarchies focus on the relationship between pieces of information. This entire course is set up as a hierarchy, with main titles, subtitles, and important points either numbered or bulleted under those. The periodic table of chemical elements is another example of a hierarchy.

Now that you know all about encoding information, you need to know how information is stored for later retrieval.

Storage

Humans have three storage systems. Each one is capable of storing information for different periods of time. The three systems are

- sensory memory
- short-term memory
- long-term memory

Sensory Memory

We hold information in **sensory memory** for a very short period of time. We can hold visual information in sensory memory for less than half a second and auditory information for three to four seconds. This is why, even when you are not paying attention to someone talking to you, you remember what they said to you. Even though your sensory memory is brief, it is huge.

Short-term Memory

From our sensory memory some information is encoded into **short-term memory**. This is more permanent than sensory memory. It contains information of which you are consciously aware.

Short-term memory is also called **working memory**. Everything you are thinking at the current moment is held in your short-term memory. Short-term memories are temporary. If you do nothing with them they will fade in ten to thirty seconds.

There are limitations to how much information we can store in short-term memory. It seems that seven plus or minus two chunks of information can be stored at a given time. The information will not fade as long as you rehearse it.

Long-Term Memory

Long-term memory is our relatively permanent and limitless storehouse of the memory system. It stores memories without conscious effort. No one knows how long memories can be stored. Long-term memories can be stored in three different formats.

1. **Episodic memory:** This is memory of specific events stored as a sequence.
2. **Semantic memory:** This is memory of general knowledge stored as fact, meanings, or categories.
3. **Procedural memory:** This is memory of skills and how to perform them stored as a sequence.

There are three types of long-term memories. They are

1. explicit memories
2. implicit memories
3. flashbulb memories

Explicit memory is our memory for facts and experiences. For example, the name of the street where we live, what we had for lunch today, and what we did last night. This information is processed through the hippocampus of the brain.

Implicit memory is our memory for skills and procedures that are retrieved without conscious recollection. Examples include how to walk, how to drive, and how to play the piano. These memories are processed through the cerebellum.

If you damaged your hippocampus, you would be unable to form new memories of facts and experiences. You would, however, still remember how to do things.

The most interesting type of long-term memory is the **flashbulb memory**. These are memories of significant, emotional events. It is like you take a picture of the event and put it into your memory where it stays forever.

How do we get information into long-term memory and how does our brain store all that information? The answers come from brain research.

Memory and the Brain

Research has shown that our brains build our memories like a jigsaw puzzle. It invents new pieces if some are missing. This is why some of our memories are very accurate while others are not.

Research has also shown that each memory appears to activate a specific pattern of firing in the neurons because every memory begins as an impulse. This leaves a track at the synapses where neurons communicate with each other. With increased activity in a particular pathway, connections between the neurons strengthen and the neurotransmitters are released more easily. This process is called **long-term potentiation**.

Now that we have memories in storage how do we go about retrieving all of that valuable information? Well, we have to either recall it or recognize it.

Retrieval

The last stage in the memory model is **retrieval** or getting information out of memory so that we can use it. There are two different kinds of retrieval: recall and recognition.

- **Recall** is our ability to draw information out of storage and into conscious awareness. Recall is used on tests in school in the form of fill-in-the-blank questions, short-answer questions, and essay questions.

- **Recognition** is our ability to match a current event or fact with something already in memory. It is used on tests in school in the form of multiple-choice questions and matching questions.

We are better at recognition than we are at recall.

How do we get to the memories that we need to retrieve?

- We use **retrieval cues**. These are events, feelings, places, or any other stimulus linked to a specific memory.

- We use **context effects**. This is when you return to the exact situation that you were in when you experienced something. Being in a situation or context that is similar to one that you've been in before can sometimes trigger feelings of déjà vu. One explanation for this is that our current situation may be loaded with retrieval cues that take us down paths that lead to similar experiences.

- We use **mood effects**. This is when you recall experiences that are consistent with your current mood (good or bad). When we are happy, we recall happy events and when we are sad, we recall sad events.

Memory plays a remarkable role in our lives. We encode important information, store countless pieces of information in both short-term and long-term memory, and then retrieve needed information from long-term storage.

But what happens when we can't remember? We simply forget. This could be the result of an encoding failure, a storage failure, or a retrieval failure. Let's look at each one separately.

Forgetting as Encoding Failure

A lot of what we sense through our sensory memory, we don't encode. For this reason, we will never remember it. Daniel Schacter lists seven ways that our memories fail us. The first three ways have to do with encoding failure.

1. **Absent-mindedness:** This happens when we don't pay attention to detail.
2. **Transience:** This happens when unused information fades over time.
3. **Blocking:** This happens when we can't access information that we have stored. This is when the information is "on the tip of the tongue," but we can't get it out.

Forgetting as Storage Failure

There are times when we encode the information well, but we still can't retrieve it. The next three ways of forgetting have to do with storage failure.

1. **Misattribution:** This happens when we confuse who said what and when they said it, or when we remember a dream as an actual event.
2. **Suggestibility:** This happens when others mislead us into thinking that we remember certain information. This idea will be covered further on in the lesson.
3. **Bias:** This happens when our current thoughts and feelings change what we thought or felt at an earlier time.

Forgetting as Retrieval Failure

This type of forgetting probably accounts for most of our forgetting. You encoded and stored the information; however, you can't retrieve it. This is retrieval failure.

Persistence happens when we forget unwanted memories. This is the stuff that is better left forgotten. This is often called **motivated forgetting**. It can serve as protection from anxiety or potentially distressing information.

One other reason that we often can't retrieve information is because old information and new information compete for our attention. This is called **interference**. There are two types of interference: retroactive interference and proactive interference.

- **Retroactive interference** occurs when learning new information interferes with the recall of older information. For example, you study psychology then you study math. A little while later, you can't remember what you studied in psychology. This is because studying math interfered with what you studied in psychology. Let's look at two other examples. You can't remember last year's timetable because all you can remember is this year's timetable. You can't remember how many basketball games you won and lost last year because you are remembering only this year's games.

- **Proactive interference** occurs when information learned previously interferes with the recall of information learned more recently. For example, you study psychology then you study math. You can't remember what you studied in math because what you studied in psychology has interfered. Let's look at two other examples. You can't remember your new phone number; you only remember your old one. You can't remember this year's locker combination, only the combination you had last year.

When it is time to retrieve something from memory, your brain must put together all of the pieces that are stored there. Sometimes pieces of information are missing and the brain has to fill in the gaps. It occasionally does this with false information. Once this false information gets in there, it is pretty hard to distinguish it from the true information. We believe the false information to be true. This is called the misinformation effect.

Evidence for the misinformation effect can be seen when we look at eyewitness testimony. Quite often, what we remember is determined by the types of questions that we are asked as well as their wording. These types of questions are called leading questions. This idea puts into question the reliability of eyewitness testimony. Young children are very susceptible to the misinformation effect. They can easily construct false memories.

Learning Activity 4.5: Test Your Memory

Part 1

The following are some of the more common reasons that students give for doing poorly on tests. Based on what you have learned about memory in this lesson, suggest one possible solution for each reason.

1. I just can't remember information when I take tests.

   Solution: _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

2. I remember the information when I'm studying but I forget it the day of the test.

   Solution: _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

3. I can't even remember information while I am studying, much less during the test.

   Solution: _____
   _____
   _____
   _____
   _____
   _____
   _____

Learning Activity 4.5: Test Your Memory (continued)

4. My memory is so bad that I can't even remember three pieces of information.

    Solution: _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

5. I remember things I read in a book but I can't remember the things I hear.

    Solution: _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

6. I remember every word that the teacher tells me, but I have trouble remembering what I read.

    Solution: _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

7. I am just so bored with what I have to learn that I can't remember it.

    Solution: _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

Learning Activity 4.5: Test Your Memory (continued)

Part 2

Think about all the information that has been presented in this course. More specifically, think about Modules 1, 2, and 3? Do you remember what topics were covered in those modules? Can you list them? If you can't, is the forgetting due to an encoding failure, a storage failure, or a retrieval failure?

Describe each of the following types of forgetting, referring specifically to an ability or inability to recall the topics that have been covered so far in this course.

Encoding failure: _____
_____
_____
_____
_____
_____
_____
_____
_____

Storage failure: _____
_____
_____
_____
_____
_____
_____
_____
_____

Retrieval failure: _____
_____
_____
_____
_____
_____
_____
_____
_____

Check the answer key.

Lesson Summary

The focus of this lesson was on examining what causes you to remember what you remember and forget what you forget. The lesson looked at how memories are processed

- from encoding (getting information in)
- to storage (keeping the information there)
- to retrieval (getting the information out)

Throughout the lesson, tips on how to improve your own memory were provided. The lesson ended with a discussion on how memory can fail and be inaccurate.

Notes

Assignment 4.3: What's their Name? (14 marks)

You are at a new school where you have to meet a lot of new people. It's very important that you learn and remember all of their names.

1. Describe the role that sensory memory, short-term memory, and long-term memory play for you in this situation. *(6 marks)*

Sensory memory: _____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Short-term memory: _____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Long-term memory: _____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Assignment 4.3: What's their Name? (continued)

2. Analyze what is happening in terms of the three stages of the Information Processing Model of memory (encoding, storage, and retrieval). *(6 marks)*

Encoding _____
_____
_____
_____
_____
_____
_____
_____

Storage _____
_____
_____
_____
_____
_____
_____
_____

Retrieval _____
_____
_____
_____
_____
_____
_____
_____

3. Finally, identify strategies you might use to improve your ability to remember names. *(2 marks)*

_____
_____
_____
_____
_____
_____

LESSON 5: THINKING AND LANGUAGE

Lesson Introduction

Thinking and language are what make us human. Most of us like to think, communicate, and solve problems. Our cognitive abilities—the mental activities that are associated with thinking, knowing, and remembering—are like no other species.

In this lesson, we will examine thinking and language. The components of thinking—concepts and problem solving—will be explained. Many things can stand in the way of solving problems. These obstacles that influence our problem-solving ability will be discussed.

The lesson will look at how we learn language. The stages of language development will be covered. The lesson will end with a brief discussion on animal thinking and language.

Thinking

What is thinking? It is difficult to define or describe because descriptions themselves are thoughts. Can you describe thought using thought?

Psychologists instead define types of thought or categories of thought. There are two types of thought: concepts and images.

Concepts and Images

A concept is a mental grouping based on shared similarity. It is the way we categorize and think about objects, people, and ideas that we encounter. Our brain sorts this information into conceptual categories. We have a concept for car, kitchen, tree, mother, teacher, generosity, and so forth. When we come across something new, we know immediately if it fits our existing concept.

One of the ways that we decide whether or not something belongs in a conceptual category is to match it to the best example of that concept according to the majority of people. The best example is called a **prototype**. The closer the new object, person, or idea is to the prototype, the easier it is to categorize.

Category	Prototype	Not a Prototype
Tree	Maple	Bonsai
Bird	Robin	Penguin
Furniture	Chair	Footstool
Mode of Transportation	Car	Unicycle

The other type of thought is an **image**. These are the mental pictures that we create in our minds of the outside world. Images can be visual (snow falling), auditory (the sound of the snow plows), tactile (the feel of soft, fluffy snow), olfactory (the smell of car exhaust on a cold day), or gustatory (the taste of a cup of hot chocolate). These senses were discussed in Module 2.

Many researchers study thinking by looking at how we solve problems.

Problem Solving

Researchers who study problem solving have identified four different strategies or methods that we use when we are faced with a new situation.

1. trial and error
2. algorithms
3. heuristics
4. insight

1. For some problems, we use **trial and error**. This is when we try every possible solution. This method can be very time-consuming and, sometimes, we may not solve the problem. It is not a very effective or efficient way to learn.

2. For some problems, we use **algorithms**. This is a logical rule or procedure that guarantees a solution to the problem. These rules or procedures often involve formulas. Examples of algorithms include using the formula length times width to find the area of a rectangle, systematically checking every drawer in your bedroom for your favourite blue sweatshirt, or checking through all the tunes on your MP3 Player until you find the one you are searching for.

3. For some problems, we use **heuristics**. This is a rule-of-thumb that allows us to reach a solution more efficiently and quickly, even though it does not guarantee a correct solution.

   We sometimes make a judgment based on examples of similar situations that come to mind. Other times, we judge a situation based on how similar it is to the prototype that we have in our mind.

   Heuristics are shortcuts. When they work, they save us time and energy. An example of a heuristic would be to check the drawers that have only sweatshirts in them to find the favourite blue one and to search on the MP3 player for the name of the recording artist in order to find the specific song.

4. For other problems, we use **insight**. This is when a solution just pops into our head.

Even though we have all these different ways of solving problems, we also have obstacles that prevent us from coming up with the best solutions. These obstacles prevent us from looking at alternatives. In other words, they give us tunnel vision.

Problem-Solving Obstacles

Problem-solving research identifies some common mistakes or obstacles that people make while trying to solve problems.

Fixation is when we approach a problem the same way every time. This can be time efficient, but it sometimes prevents us from seeing the problem from a new perspective.

Functional fixedness, a type of fixation, occurs when we can't think of different uses for objects. For example, a butter knife has many other purposes than spreading butter. The same can be said of duct tape, a loonie, and a credit card. If you can think of many uses for these items you don't have functional fixedness.

Confirmation bias is our tendency to notice information that supports what we believe and ignore information that doesn't support what we believe. We all want to be right, so we search for evidence supporting our ideas more eagerly than for evidence disputing our ideas. The problem with this is that we may miss important information in finding the right solution.

Overconfidence is our tendency to be more confident than we are correct. We tend to overestimate the accuracy of our beliefs and judgments.

Framing refers to the way that a problem is presented. This can have a dramatic effect on how we view a problem or an issue. It can influence the decisions that we make. Framing the same issue in two different ways can have two very different results. For example, what would happen if an airline company bragged about the number of airplane crashes that it had, rather than the number of successful airplane trips?

Belief perseverance is our tendency to stick with our initial idea even when we get evidence that proves us wrong. This is why first impressions are so important. Once they are established, they are likely to continue for a long period of time.

Learning Activity 4.6: Thinking

Read the following examples of different types of problems or obstacles to solving the problem. Choose the word from the word bank that most closely applies. Some words may be used more than once.

Concept	Mental Image
Prototype	Trial and Error
Algorithm	Heuristic
Insight	Confirmation Bias
Functional Fixedness	Belief Perseverance

1. You are asked to decide which city is farther from Winnipeg. Regina or Thunder Bay? You try to picture a map of Canada to help you decide. _____

2. You have learned the rules to calculate the circumference and the area of a circle. _____

3. You look at a sea horse and have trouble recognizing that it is a type of fish. _____

4. You learn that one of your neighbour's children plays hockey. You assume that it is their son, not their daughter. _____

5. You need to get into your friend's locker and you don't know the combination. You try every possible combination. _____

continued

6. You go away to winter camp and forget to take your pillow. It doesn't occur to you to use your down-filled parka as your pillow. _____

7. You get a new DVD player and you spend a lot of time trying different approaches to programming the machine rather than reading the manual. _____

8. You are having trouble coming up with a topic for your major paper in History class. However, one day while at the mall, you have a flash of inspiration. _____

9. You heard that there is a new clothing store in your town. You decide to drive up and down every street until you find it. _____

10. You hear about a terrorist attack and you think it is the same as 9/11. _____

11. You have your heart set on buying a specific brand of television, no matter what anyone says about other brands. _____

12. In Art class, you are asked to draw a restaurant scene. You draw a room with tables and chairs, waiters and waitresses, and food on the tables. _____

13. You tell your friend that the coffee shop close to your house has the best coffee. Your friend doesn't agree with you. To prove your point, you take your friend to four other coffee places. _____

14. You have quite a buildup of ice on your car windshield and you can't find your window scraper. Your friend suggests that you use the plasticized identification card that you have in your wallet. _____

15. Every time the picture on your television goes fuzzy, you hit the top of it to clear the picture. When you are over at a friend's house and their television goes fuzzy, you hit the top of it and nothing happens. _____

Check the answer key.

Language

Thinking and language are what make us human. **Language** is a way of using speaking, writing, signing, and gesturing to communicate with others. Your brain is processing the language that you are reading right now. Stop and think about the previous sentence. In order to do this, you use language.

Some psychologists investigate how language works and how we acquire it. This helps us understand how we think and behave.

Building Blocks of Language

To build a house you need materials as well as knowledge of the rules of what to do with those materials. The same thing applies to language. There are the materials and then there are the rules of how to put them all together.

The materials of the building blocks are the phonemes and the morphemes.

- **Phonemes** are the smallest units of sound that are used in a language. In English, there are about 44 phonemes. Examples of phonemes are "b", "m", "a", and "th".
- **Morphemes** are the smallest units of meaningful sound. They can be words such as "a" and "but" or they can be parts of words that have meaning, such as "pre" and "un".

We combine phonemes and morphemes to make words. The words are then spoken or written in a particular order. This is called **syntax**. Think of this as the grammar of the language. It tells you what order to put words in and how to make sentences or form complete thoughts.

But how do we learn language?

Language Acquisition

The learning of language is called language acquisition. Two psychologists have different theories on how language is acquired or learned. They are B.F. Skinner and Noam Chomsky.

- According to Skinner, language is learned, like everything else, through association (by linking certain sounds with certain people and objects), imitation (by doing what we see others doing), and reinforcement (by getting or not getting hugs, praise, and so on). Those concepts were covered in the lesson on operant conditioning and learning by observation. Skinner's theory helps to explain why we speak the language that we learn at home.

- According to Chomsky, we are pre-wired with the capability to learn language. He believes that the brain is like a **language acquisition device** and that there is a **critical period** or an optimal time for language to be developed. Chomsky theory helps to explain why children can master the complexity of learning a single language or many languages at an early age.

Most psychologists today agree that we acquire language through a combination of conditioning and an innate predisposition to learn.

When do children start to learn language?

Language Stages

Although we have a predisposition to learn language, we go through a series of steps or stages. The stages are called the babbling stage, the one-word stage, and the two-word stage.

1. **Babbling stage**
   - This stage begins when a baby is approximately four months old and makes random noises.
   - The noises are the same no matter what language the baby hears.
   - When the baby is around ten months old the babbles are restricted to the noises of the home language.

2. **One-word stage**
   - This stage begins when the baby is around twelve months old.
   - It starts with short, one syllable words like "ma" and "da".
   - Word learning begins to accelerate when the child is around eighteen months old. At this point, a child learns an average of one new word every day.

3. **Two-word stage (also called telegraphic speech)**
   - This stage begins when the child is about two years old.
   - The child is now building two-word sentences.
   - These two-word sentences begin to follow the rules of syntax or word order (for example, "big house", "me cookie").
   - After age two, children very quickly develop longer phrases.
   - Children in this stage often apply the grammar rules that they have learned to the wrong situations. They say things such as, "I sawed the bird outside" instead of "I saw the bird outside."

Thinking and Language Together

If language influences the way that we think, does it influence what we are able to think about? Psychologist Benjamin Whorf believes that the language that we use controls and, in some ways, limits our thinking. His theory is called the **linguistic relativity hypothesis**.

Studies have been conducted to demonstrate the effect of labeling on how we think about people, events, objects, and ideas. For example,

- people who have different names for two shades of yellow are more likely to describe them as being different
- people who live in areas that are snow-covered most of the year describe snow in many different ways
- people who speak two or more languages report feeling different depending on the language they are speaking
- people who see gender words such as "he" or "she" have a certain image of what those words imply

There are times when we think without using language. Instead, we make a mental image. Using mental images has been shown to increase performance. Essentially, after you learn a skill, you practice the skill by imagining yourself doing the skill. The research suggests that this will increase performance. The list of things that it can be applied to is endless: piano playing, golf, studying, and so forth.

If thinking and language make us human, do the animals that we closely associate with also think and use language?

Animal Thinking and Language

It appears that animals display remarkable capacities for thinking. The following are a few examples.

- Apes and monkeys can learn concepts. Once the concept has been learned, neuron activity can be measured with MRIs when the animal encounters similar concepts.
- Chimpanzees use insight when trying, with only a stick available to them, to reach bananas that are suspended.
- Pigeons can sort objects into groups of similar items.

It appears that animals can also use and understand language. The following are a few examples.

- Monkeys use different alarm cries depending on the type of predator that is approaching.
- Dogs can be asked to retrieve certain items by name.
- Chimpanzees can make signs or push buttons in sequence to get a reward.
- Pigeons can peck a sequence of keys to get food.

Are these examples of thinking and language?

This controversy has divided the scientific community. Many scientists have made serious attempts at rearing apes in language-rich environments. However, the results have not overwhelmingly demonstrated that apes can use language as human beings use it.

Following are the criteria generally used to determine a true capacity for language.

- Is the language *symbolic*? Can it be used to represent absent objects?
- Does the language have *syntax* or word order?
- Can the language be used in a creative or *productive* manner?

Lesson Summary

In this lesson, we examined thinking and language. The components of thinking—concepts and problem solving—and the many things that can stand in the way of problem solving were explained.

The lesson then took a look at language. More specifically, the building blocks of language, the learning or acquiring of language, and the stages of language development were covered. The lesson ended with a brief discussion on animal thinking and language.

Notes

LESSON 6: BODY RHYTHMS, SLEEP, AND DREAMS

Lesson Introduction

Consciousness, or the awareness of yourself and your environment, has only recently become a research area for psychologists. This is because of more sophisticated brain imaging tools like the PET scan, the MRI, the fMRI, and the CAT scan (remember those from Module 1), and an emphasis on cognitive psychology.

In this lesson, we will define consciousness, the different levels of consciousness, and the body rhythms that affect whether we are awake or asleep. We will also explore the stages of sleep, why we sleep, what happens if we don't get enough sleep, Rapid Eye Movement, and dreaming. The lesson will end with a look at different types of sleep disorders and problems.

What is Consciousness?

Consciousness is the awareness of yourself and your environment. We experience different levels of consciousness throughout our day. Even though all researchers can't agree on the specific levels of consciousness, some of the possible ones are:

- conscious level
- nonconscious level
- preconscious level
- subconscious level
- unconscious level

Conscious level: This level includes information—about yourself and your environment—of which you are currently aware. For example, at this very moment you are focusing on the words and the meanings that you are reading.

Nonconscious level: This level includes the body processes that are controlled by your mind and of which you are not aware. For example, your heart rate, your breathing, and your digestion.

Preconscious level: This level includes information about yourself and your environment that you are not currently thinking about but that you could think about if needed. For example, at this moment you are probably not thinking about what you did last night but you might be thinking about that now that it has been mentioned.

Subconscious level: This level includes the information that we are not consciously aware of but that we know exists because of our behaviour. For example, we tend to prefer things that we have seen before over new things, even if we can't consciously remember seeing the things before. This is called the mere exposure effect. Another example is called priming. This is when we respond quicker to questions that we have seen before, even if we don't consciously remember seeing them before.

Unconscious level: This level includes the information that is unacceptable to our conscious mind. For example, this could include memories of traumatic events that we have chosen to forget.

All of the above levels of consciousness occur when we are awake. However, we can temporarily lose waking consciousness by nodding off or going to sleep. We have naturally occurring body rhythms that affect our wakefulness and our sleep.

Body Rhythms

Our bodies have real biological rhythms that affect our body temperature and our blood pressure. There are three types of body rhythms: circadian rhythms, ultradian rhythms, and infradian rhythms.

Circadian rhythms occur once during a 24-hour time period. An example is the cycle that we use for sleeping and waking. This cycle gets disrupted when we experience jet lag, set the clocks back or ahead, or work nights.

Ultradian rhythms occur more than once a day. An example is the different stages that we go through while we are sleeping.

Infradian rhythms may occur once a month. An example is the menstrual cycle.

While we are aware of these body rhythms, we rarely give them a second thought.

Let's begin with a look at the body rhythms—the circadian rhythms (that affect sleep and wakefulness) and the ultradian rhythms (the stages of sleep).

Sleep and Sleep Deficit

Sleep is referred to as a **state of consciousness** because while we are asleep we are less aware of ourselves and our environment than we are in our normal waking state. Other states of consciousness include hypnosis and drug-induced states. We will talk about those states in the next two lessons.

Do you realize that you have spent more than a third of your life sleeping? Our brain keeps a record of how much time we spend sleeping for an approximately two-week period. This is why you sometimes fall asleep during a boring class, nod off while reading a boring lesson in this course, or sometimes sleep until noon on Saturdays. Most teenagers need about nine hours of sleep a night. If you need an alarm clock in order to wake up, you may not be getting enough sleep.

Are you getting the amount of sleep that you need? How much sleep is enough?

Though the general consensus is that the average adult requires eight hours of sleep a night, not everyone needs eight hours. Genetics may have a role in how much sleep you need. Research on fraternal and identical twins showed similar sleep patterns only in identical twins. Sleep patterns are also culturally influenced. People who live in industrialized countries, like ours, sleep less than they did a century ago. Because of the light bulb and shift work, we tend to go to bed later and sleep less.

What happens when you don't sleep enough? The research on sleep deprivation shows that lack of sleep

- decreases the levels of hormones that are necessary for your immune system to function properly
- increases the level of cortisol, a stress hormone, which negatively affects learning and memory
- increases the number of car accidents because people fall asleep at the wheel
- affects the number of accidents (even the one-hour time change in the spring and the fall affects the number of accidents)
- affects concentration and irritability
- affects cancer-fighting immune cells
- affects premature aging

You can see what happens when you are sleep deprived. The question remains though why do we sleep or need to sleep?

Why We Sleep

The control centre for the circadian rhythm of sleep is in the hypothalamus. Changes in lightness and darkness are monitored by a type of sensor in this part of the brain. The sensor triggers the increase or decrease of certain hormones into the bloodstream. The hormone **melatonin** has been linked to regulating the sleep-wake cycle.

While you are sleeping, the level of melatonin in your body increases. When you wake and turn on the lights, the level of melatonin decreases. The level continues to drop until you turn the lights off and go back to sleep. For some people who suffer from insomnia, or the inability to sleep regularly, taking melatonin supplements can help.

Now that we know how we go to sleep, let's take a look at why we need to sleep. There are four theories of why we need to sleep.

1. **Sleep protects**

   When we are asleep, we are out of harm's way (we are protected from the danger of predators). The greater the need to hide or be protected from predators, the more an animal sleeps. Hence, those with the least need to hide or be protected from predators sleep less. For example, elephants and horses sleep three to four hours a day, gorillas sleep twelve hours a day, cats sleep fourteen hours a day, and bats and chipmunks sleep twenty hours a day.

2. **Sleep helps us recover**

   When we are asleep, our brain tissue is restored and repaired. Our neurons have time to repair themselves.

3. **Sleep helps us remember**

   When we are asleep, we restore and rebuild the memories of our day's experiences. It helps us in the creative process as well. If we have a problem that we can't solve, sleeping sometimes helps us find a solution.

4. **Sleep may play a role in the growth process**

   When we are asleep, our pituitary gland releases a growth hormone. This is why we sleep more during growth spurts and we tend to sleep less as we age.

The sleep-wake cycle is an example of a circadian rhythm. Nevertheless, during that cycle we have 90-minute ultradian rhythms. These cycles lead us to talking about the different stages of sleep.

Sleep Stages and Dreaming

Sleep researchers have discovered that during the 90-minute ultradian cycle two types of sleep occur. This was discovered by measuring brain waves or brain activity with the help of an EEG as well as the eye movements and muscle tension of individuals who are sleeping. The two types of sleep are called **REM sleep (Rapid Eye Movement sleep)** and **NREM (non-Rapid Eye Movement sleep)**. We'll talk about these as we look at the different stages of sleep.

Sleep Stages

Figure 4.5	**Stages of Sleep**
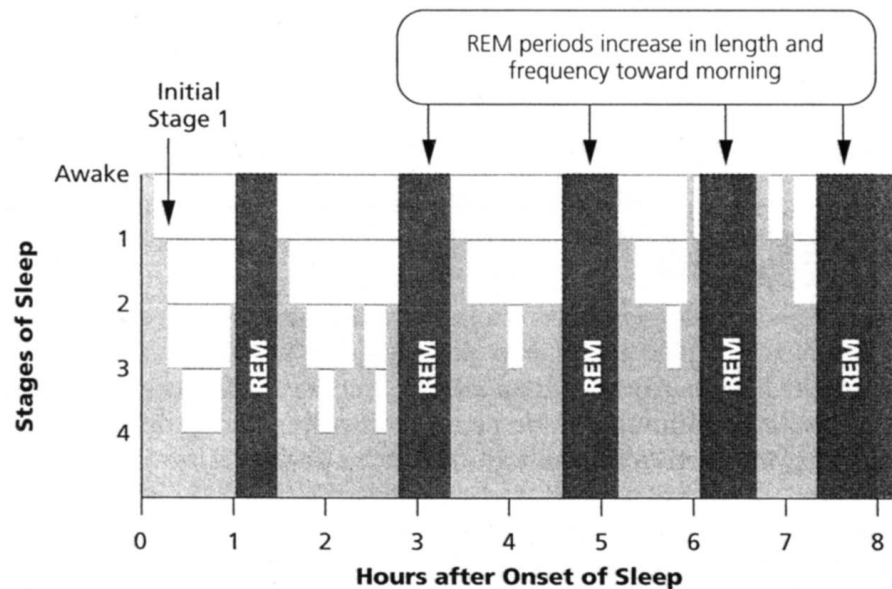
As you can see from the above diagram we cycle through different stages of sleep during the night. Our brain waves and our level of awareness change as we cycle through each stage. Cycling through the stages once takes about 90 minutes.

The stages are as follows:

Stage 1: This stage takes about five minutes. This is when your breathing slows down and your brainwaves are irregular. This stage is also called a **hypnagogic** state because it is during this time that you feel like you are floating or falling. You can be easily awakened during this stage.

Stage 2: This stage takes about twenty minutes. During this stage there are little bursts of brainwaves called **sleep spindles**. It is at this point that you are clearly asleep. It is also during this stage that talking in your sleep may occur.

Stage 3: This stage of sleep is often called a transitional stage. The brainwaves begin to become large and slow.

Stage 4: This stage gets shorter as the night progresses. This is the stage of **deep sleep**. It is difficult to wake someone up who is in this stage of sleep. If you do wake up, you feel groggy and disoriented. It is also during this stage that sleepwalking occurs.

Figure 4.6 **Brainwaves during Stages of Sleep**

EEG Pattern
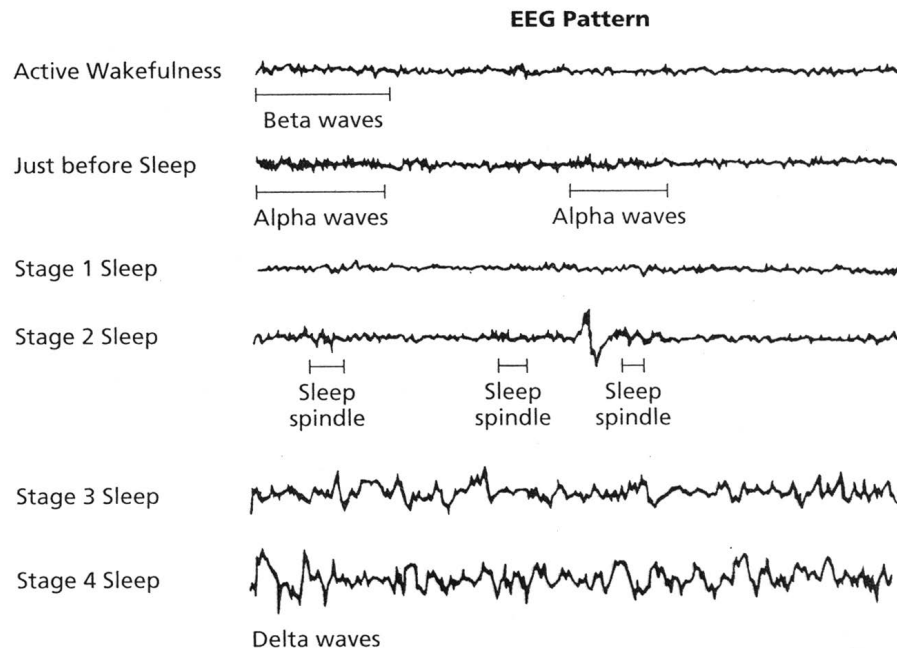
If you go back to the graph of the stages of sleep, you can see that you progress backwards through stages 3, then 2, then 1, and then through something called REM or Rapid Eye Movement sleep.

REM sleep: This part of the sleep cycle gets longer as the night progresses. The first time you go through REM sleep, it only lasts for a short period of time. An EEG at this time shows brain waves that look like they do when you are awake.

During REM, your heart rate increases, your breathing becomes rapid and irregular, your eyes move back and forth, and your genitals may become aroused. Your brain stem blocks messages from going to the motor cortex. You are paralyzed. This is when you have dreams. REM sleep is sometimes called **paradoxical sleep** because your muscles are relaxed but your other body systems are very active.

Stage 3 sleep and stage 4 sleep combined are called slow wave sleep, or **delta sleep**. It is called this because of the type of brainwave that occurs during this period. The first time you go through this ultradian cycle it will last about thirty minutes.

Remember that there are two types of sleep—NREM and REM.

NREM or non-rapid eye movement sleep is the period of sleep in stages 1 through 4 that don't have eye movement or dreams.

During REM sleep we dream.

Dreams

Everyone dreams, but not everyone remembers their dreams. Dreams are the images, resembling stories, that we experience when we sleep. While some people remember their dreams, some can even control their dreams. This is referred to as **lucid dreaming**. It is when we can control the storyline of our dream. If you are awakened during a dream or shortly after a REM period, you can often remember what you were dreaming about.

There are five theories about why we dream. They include dreams as

1. wish-fulfillment
2. activation-synthesis
3. information processing
4. a physiological function
5. a cognitive development function

In the next part of this lesson, we are going to look at the different theories of dreaming as part of a dream analysis assignment.

Let's start with the first theory of why we dream (wish-fulfillment).

1. Dreams as Wish-Fulfillment

The **wish-fulfillment theory**, by Sigmund Freud, is that dreams provide rare insight into the unconscious mind. Freud was so fascinated by dreams that he kept a dream diary even as a young child and used these dreams as the source for many of the ideas outlined in his first and most well-known publication, *The Interpretation of Dreams*. In order to better understand Freud's ideas about dream interpretation, it is helpful to have some background knowledge of his overall theories.

Freud thought that the mind was like an iceberg. This concept was elaborated on in the lesson on personality in Module 3. Let's review Freud's ideas once again to see how they apply to dream theory.

Figure 4.7   **Freud's View of the Mind**
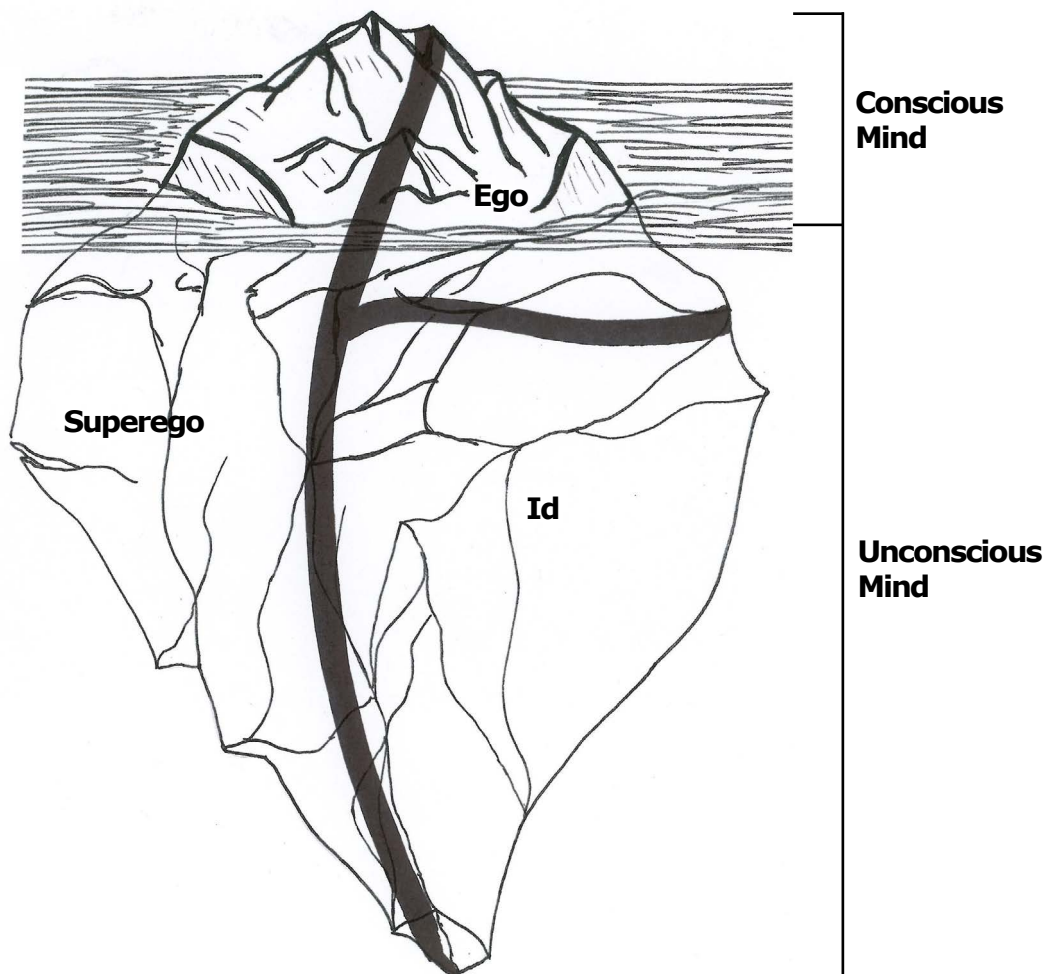
The iceberg floats with one-seventh of it above water. Freud believed that our unconscious wishes and desires can have a great deal of influence over our behaviour. He believed that getting in touch with these hidden desires was the key to having a healthy and fulfilling life. Dreams were the keys to unlocking these hidden secrets.

Freud believed that the mind was subdivided into three parts: the id, the ego, and the superego.

According to Freud, we are born with our **id**. The id is an important part of our personality because, as newborns, it allows us to have our basic needs met. Freud believed that the id is based on our pleasure principle. The id wants whatever feels good at the time, no matter what the reality of the situation. For example, when a child is hungry, the id wants food; therefore, the child cries. The id cries when the child's diaper needs to be changed. When the child is uncomfortable, in pain, hot, cold, or just wants attention, the id speaks up until his or her needs are met.

The id doesn't care about reality or about the needs of anyone else, only its own satisfaction. If you think about it, babies are not very considerate of their parents' wishes. They don't care what time it is or whether their parents are sleeping, relaxing, eating dinner, or bathing. When the id wants something, nothing else is important.

Within the next three years, as the child interacts more and more with the world, the second part of the personality begins to develop. Freud called this part the **ego**. The ego is based on the reality principle. This means that the ego understands that other people have needs and desires and that sometimes being impulsive or selfish can hurt us in the long run. It's the ego's job to meet the needs of the id while taking into consideration the reality of the situation.

By the age of five, the **superego** develops. The superego is our moral side. It develops due to the morals placed on us by our caregivers. It is like our conscience—our beliefs pertaining to right and wrong.

According to Freud, dreams are the id's attempt to fulfill its wishes and desires. Sometimes, these desires must be disguised. A dream can have a **manifest content** (the actual storyline you remember from a dream) and a **latent content** (the underlying meaning).

Dreams tend to reflect things from childhood (often bringing to light details that seemed trivial to us at the time) as well as the wishes of the id (which are often repulsive).

2. Dreams as activation synthesis

The **activation synthesis theory** was put forward by Allan Hobson and Robert McCarley. They believe that dreams are a random event caused by the firing of neurons in the brain. This random firing sends signals to the body's motor systems. Because the body is paralyzed during REM sleep, the brain attempts to make sense of the random neural firing by creating a dream.

In this theory, dreams reflect past memories, fears, hopes, and desires. This theory would explain why we don't experience taste or smell in dreams because these neurons are not triggered.

3. Information Processing Theory

According to the **information processing theory**, dreams allow people to review and address the problems they faced while they were awake. During dreams, our brain processes the information that is accumulated during the day. This information is sorted and new neural connections are made to accommodate newly forming memories. In other words, dreams allow us to rehearse experiences as we sleep so that we remember them better. They also allow us to rehearse hypothetical situations so that we can learn from them. Dreams can help with memory and problem solving.

4. Dreams as having a physiological function

Neural activity during REM sleep provides stimulation for our brains. Infants spend more time in REM sleep because their brains are developing at a fast rate. The discovery that the pituitary gland secretes a growth hormone during delta sleep supports this theory.

5. Dreams as having a cognitive development function

Some researchers see dreams as a chance for thinking to develop. Children's dreams are often disjointed and there is no storyline that continues in the dream. This is often the way that young children think. As adults, the dreams tend to have more of a story line. They are based on the concepts and knowledge that we have.

One thing that all dream researchers can agree on is that we need REM sleep. Nevertheless, we are not the only animals to experience REM sleep. Many animals show REM periods when they are hooked up to EEG machines. This shows us that there is a biological need for sleep. After a period of sleep deprivation, we automatically go into REM sleep without going through the other stages. This is called **REM rebound** and it is proof that we need REM sleep: we need to dream.

Assignment 4.4: Sleeping Case Study (5 marks)

Read the situation below and write your answer in the space provided.

One of your friends is starting university next year. She would like to have her own apartment instead of living with her parents. She plans to work full time on the night shift at the local grocery store to help pay her rent and her tuition. Your friend knows that it is going to be tough to keep up with her classes and a full-time job. Regardless, she thinks that she can handle it by cutting down on the amount of sleep she gets.

Based on what you know about sleep, the stages of sleep, and why we need sleep, provide some advice to your friend and tell her what might happen if she becomes sleep deprived. Keep in mind that she has not taken this course

Your advice:

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Assignment 4.4: Sleeping Case Study (continued)

Sleeping Case Study Marking Rubric	
Marks	**Statement that best reflects the student's response**
0	The response does not answer the question either because it lacks the necessary information or the information is inaccurate, poorly organized, and unclear.
1-2	The response partially answers the question either because it contains some inaccurate information or because some of the information is inaccurate, poorly organized, and unclear.
3-4	The response answers most of the question. It contains most of the necessary information. Most of the information contained in the answer is correct; however, it may not be well-organized or clearly stated which forces the reader to make assumptions about the response.
5	The response contains all of the necessary information to answer the question. All of the information contained in the answer is correct and well-organized. The reader does not need to make assumptions because the writing is clear.

Sleep Disorders and Sleep Problems

Not everyone follows a normal sleep pattern. Some people experience disruptions or problems with sleeping, such as insomnia, sleep apnea, and narcolepsy.

Insomnia

Insomnia is the most common sleep disorder. The insomniac has trouble falling asleep and staying asleep on a regular basis.

It is often treated with suggestions for changes in the person's behaviour, such as

- exercising more and reducing the amount of caffeine which is found in food and drinks
- maintaining a consistent regular sleep pattern by getting up at the same time every day and going to bed at the same time every day
- avoiding strenuous activity right before bed

Sleeping pills are only prescribed when the above strategies don't work. Sleeping pills actually disturb the sleep pattern and can prevent someone from having a restful sleep.

Sleep Apnea

Sleep apnea causes a person to stop breathing for a short period of time during the night. The body causes the person to wake up, gasp for air, and then fall back asleep. This often prevents the person from having deep sleep. They feel tired and have trouble with attention and memory. Most of the time, the person doesn't remember waking up during the night. This is why this sleep disorder often goes undiagnosed.

Sleep apnea can be treated by using a respiration machine that provides air while the person is sleeping.

Narcolepsy

Narcolepsy occurs when a person falls asleep at unpredictable and inappropriate times. Narcoleptics fall into REM sleep no matter what they are doing.

Narcolepsy can be treated with medication and by changing behaviour or including naps during the day.

Other Sleep Problems

There are other sleep problems that don't qualify as sleep disorders.

Somnambulism or sleepwalking

This occurs during the deeper stages of NREM sleep. The sleepwalker can walk and talk, but rarely remembers doing so.

Night terrors

These occur in children during stage 4 sleep. They are when the child looks awake and terrified, even though he or she is sound asleep. The child rarely remembers what went on. Night terrors are not nightmares. Nightmares are dreams that occur during REM sleep.

Bruxism

This is teeth-grinding that occurs while sleeping.

Enuresis

This is bed-wetting while sleeping.

Myoclonus

This is a sudden jerking of the body. It occurs during stage 1 or stage 2 sleep.

Learning Activity 4.7: Sleep Disorders and Problems

Read the following ten scenarios and decide from which sleep disorder or sleep problem the person is suffering.

1. Maryann has trouble staying asleep all night. She wakes up several times and has difficulty falling asleep again. _____

2. Malcolm experiences panic, screaming, and thrashing around during the night. _____

3. Lewis has irresistible urges to fall asleep, even when he is playing hockey. _____

4. While my dad is sleeping, he often snores loudly and gasps for air. _____

5. Salim is out with friends at a comedy club when he suddenly falls asleep. _____

6. Ming often walks into the kitchen in the middle of the night and eats cake and cookies. When she wakes up the next morning, she doesn't remember doing it. _____

7. Now that Melissa has started university, she complains about the quality and duration of her sleep. _____

8. George had a very frightening dream where someone was trying to kill him. He woke up suddenly and found that he was unable to move. _____

9. My sister constantly grinds her teeth while she is sleeping. _____

10. My roommate sometimes tells me that we have great conversations in the middle of the night while I am walking around. I don't remember doing this. _____

Check the answer key.

Lesson Summary

In this lesson, we looked at consciousness, the different levels of consciousness, and the body rhythms that affect whether we are awake or asleep.

The stages of sleep, why we sleep, what happens if we don't get enough sleep, Rapid Eye Movement, and dreaming were also explored.

The lesson ended with a look at different types of sleep disorders and problems.

L ESSON 7: H YPNOSIS AND M EDITATION

Lesson Introduction

Psychologists don't believe that we are conscious or unconscious. Instead, they believe that there are different levels and states of consciousness. In the previous lesson, the different levels of consciousness were explained.

The five levels are the conscious level, the nonconscious level, the preconscious level, the subconscious level, and the unconscious level.

According to the psychological definition of consciousness, sleep is a state of consciousness because while we are asleep we are less aware of ourselves and our environment than we are when we are in our normal waking state. Two other states of consciousness are hypnosis and meditation.

In this lesson, you will learn about hypnosis, why people carry out a hypnotist's suggestions, the techniques involved in hypnosis, and how hypnosis is used in everyday life.

The lesson will end with a discussion on meditation and its uses and benefits.

What is Hypnosis?

Hypnosis is an interaction in which one person (the hypnotist) makes suggestions about perceptions, feelings, thoughts, or behaviours and another person (the subject) follows those suggestions. Suggestibility plays a key role in this social interaction. However, the question remains: Why do the hypnotist's suggestions have such control over the subject?

Psychologists have proposed two different theories: the social influence theory and the divided consciousness theory.

Social Influence Theory

Social influence theory states that powerful social influences produce the state of hypnosis. This state is no different than normal consciousness when we are fully alert and awake. The only difference is that it is our social environment that affects our behaviour and experience. This social influence can be from peer pressure, from people in authority, from people with a high status, from religious cults, or from anyone who wants to exhibit control over another person.

In hypnosis, because the subject wants to appear cooperative, his or her level of suggestibility is increased. Both the hypnotist and the subject believe in the power of hypnosis. If the belief is strong, the subject will experience results.

Support for this theory is that behaviours which are produced by hypnosis can also be produced by other means. These may include television, another person's suggestions, or something that you have read. This idea helps to explain the mob mentality of the fans at a sports game—where people who normally follow the law become out of control.

The changes that occur during hypnosis could be explained by the idea that people are acting out different roles that are suggested by the hypnotist; they are being socially influenced or they are just "playing along". Hypnosis then becomes an extension of everyday social behaviour where we will obey others because we can put the blame on them.

Other support for this theory is when people are "age-regressed" under hypnosis. In other words, they behave like adults acting like children, not like actual children.

Divided Consciousness Theory

According to **divided consciousness theory**, during hypnosis, the awareness of ourselves and our environment splits so that one part of our consciousness is not aware of what the other part of our consciousness is doing. We are all able to divide our consciousness. We can engage in a series of behaviours while thinking about other things. For example, you can clean up your room while thinking about the plans you have made for the evening. Similarly, you can drive home and not remember the trip home. Even though part of you was aware and in control (at least you hope so), you have no recollection of the drive.

In an experiment by Ernest Hilgard, hypnotized subjects were asked to put their arm in an ice water bath. The subjects could feel no pain when they did this. When Hilgard asked the subjects to lift their finger if they felt pain, they did so. This suggested to Hilgard that we have a **hidden observer** as part of our consciousness that watches and monitors what is going on. This is the part of our consciousness that remains aware.

So how does hypnosis really work?

Hypnotic Techniques

Hypnosis is an interaction in which one person suggests to another that certain perceptions, feelings, thoughts, or behaviours will occur spontaneously.

It involves the ability to turn inward, relax, and imagine. This is called **hypnotic induction**. It occurs when the hypnotist voices a series of suggestions. The key to this technique is in making suggestions that the subject can follow.

The second technique involves **posthypnotic suggestions**. These are suggestions that are made during hypnosis that should be carried out when the subject is no longer hypnotized. Part of this technique is **post-hypnotic amnesia** where the subject is unable to remember what happened while hypnotized.

At this point, you are probably wondering whether or not anyone can be hypnotized, or if any of this can really happen. Let's look at some common questions.

- Can anyone be hypnotized?

  No. About 10 to 15% of adults and about 80 to 85% of children are highly hypnotizable. People who can easily be hypnotized tend to have richer fantasy lives. You are more likely to be hypnotized if you believe in hypnosis.

- Can people do amazing physical things while under hypnosis?

  No. There is no evidence that people can do anything physically amazing that they can't do in any highly motivated state.

- Can hypnosis enhance the recall of forgotten events?

  Probably not, even though some cases do exist. In one study on hypnosis and memory, those who underwent hypnosis recalled more correct answers than the non-hypnotized people; however, they also made more mistakes when later tested. One explanation might be that they are just less inhibited about guessing, so they get more right.

- Can hypnosis make you act against your will?

  No. There is no evidence to support that it can. In a study where hypnotized subjects were asked to splash acid on someone or to pick up a poisonous snake, those pretending to be hypnotized were just as likely to do as was suggested as those who were really hypnotized.

- Do post-hypnotic suggestions work?

  No. There is no evidence to support that claim. In a study where subjects were given a post-hypnotic suggestion to send a daily postcard, hypnotized subjects were no more likely to send it than those asked to do so without hypnosis. The hypnotized subjects reported feeling that they should send out the daily postcard.

There doesn't appear to be a lot of evidence indicating that hypnosis really works. So, why do some people undergo hypnosis to stop smoking, lose weight, recall past memories, or control pain? The research on this issue is divided. There only seems to be support for the use of hypnosis in pain control because the person experiencing the pain can disconnect from it.

Meditation

A different state of consciousness is achieved through meditation. **Meditation** is a learned technique for refocusing attention. It often consists of the repetition of a mantra—a sound, a word, or a syllable—over and over again. One of the best-known forms of meditation is called **transcendental meditation**. It was founded by the Maharishi Mahesh Yogi.

In other forms of meditation, the focus is on a picture or a specific part of the body. The key to any procedure is concentration so that the person meditating becomes unaware of any outside stimulation and reaches a different state of consciousness.

Following meditation, people often report feeling very relaxed. Some even report having gained new insight into themselves and their problems. There have been documented reports of the long-term benefits of meditation. These include a decline in heart rate and blood pressure, and a decrease in oxygen usage.

Anyone can meditate. Basically, all you have to do is sit in a quiet room with your eyes closed, and breathe deeply and rhythmically. You can repeat a word or a sound over and over again. If this simple technique is practiced twice a day for twenty minutes each time, this technique can be effective in bringing about relaxation.

Before we end this lesson, have someone read the relaxation exercise on the following page to you or, conversely, you read it to someone else.

This exercise requires you to:

- Clear your mind of all thoughts.
- Relax your muscles.
- Breathe deeply and regularly.
- Concentrate on relaxing and breathing.

The procedure for the relaxation exercise is as follows:

1. Sit in a comfortable position and close your eyes.
2. Clear your mind of all thoughts, try not to think about anything except the sound of my voice.
3. Breathe deeply and slowly, in and out, in and out.
4. Continue breathing deeply as you relax your muscles. First relax the toes, feel the toes relaxing. Then move to the feet, thighs, back, fingers, arms, chest, and head.
5. Remember to keep breathing deeply, in and out.
6. Imagine you are watching a tree swaying in the breeze.
7. Watch it sway.
8. After a few minutes of quiet, open your eyes feeling relaxed and refreshed.

Are you feeling relaxed? Was your state of consciousness altered?

Lesson Summary

Hypnosis and meditation are two different states of consciousness. While we are hypnotized or meditating, we are less aware of ourselves and our environment than we are when we are in our normal waking state.

In this lesson, we examined hypnosis, why people carry out a hypnotist's suggestions, the techniques involved in hypnosis, and how hypnosis can be used in everyday life. There is little support through research that the effects of hypnosis are "real". Psychologists do agree that we can be influenced by suggestion.

Meditation (its techniques and its benefits) was also examined in this lesson. The lesson ended with a relaxation exercise.

Notes

Lesson 8: Drugs and Dependency

Sensitive Content

Psychology is a complex subject area. The material in this course is general in nature and is not intended to be applied to specific situations. If, after reading material from this course, you have questions or concerns, please seek further information from a physician, a professional counsellor, or other support services.

Lesson Introduction

Some people take psychoactive drugs or drugs that affect states of consciousness. These drugs can be either prescribed or taken illegally. In all cases, the drugs have addictive qualities. In this lesson, psychoactive drug dependency, how psychoactive drugs work, and how psychoactive drugs are classified will be covered.

There are five main drug categories.

- depressants
- opiates
- stimulants
- hallucinogens
- marijuana

Alcohol, cannabis, cocaine, crack, methamphetamines, inhalants, tobacco, magic mushrooms, ecstasy, morphine, and painkillers (for example, OxyContin) are some of the drugs that will be covered in this lesson.

A person's experience with any drug can vary. It can depend on

- the amount of drug consumed
- the strength of the drug consumed
- the setting in which the drug is used
- the person's mood prior to using the drug
- the person's expectations about the drug
- the person's past experiences with the drug
- the person's physiology

The lesson will end with a discussion on the prevention of drug use.

Psychoactive Drugs and Dependency

Chemical substances that can alter perceptions, moods, or behaviours are called **psychoactive drugs**. Believe it or not, the three most common psychoactive drugs are caffeine, nicotine, and alcohol. All psychoactive drugs can produce a changed state of consciousness.

They can also lead to **dependency**. This occurs when there is a physiological or psychological need for a drug. With continued use, there is a need to take more and more of the drug. If the drug is discontinued, **withdrawal** symptoms follow.

There are a range of withdrawal symptoms. They can include grogginess, headaches, relaxation, slowed breathing, and euphoria or exhilaration. For people with a long history of drug use, withdrawal symptoms can be much worse.

When a person regularly uses a drug, **tolerance** to that drug develops. When this happens, the user then has to increase the amount of the drug taken in order to get the same effects as before.

Psychoactive drugs have both physical and psychological effects.

Effects of Psychoactive Drugs

All psychoactive drugs have certain things in common.

1. They are able to cross the blood/brain barrier. In order for a psychoactive drug to affect consciousness, it must get through the biological filter that prevents other substances from reaching the brain.

2. They alter brain chemistry at the level of the neuron. Most psychoactive drugs act on neurotransmitters.
   - They block reuptake. This intensifies the neurotransmitter's effects in the synapse.
   - They block receptor sites. This prevents the neurotransmitters from binding. This doesn't allow neurotransmission to occur.
   - They interfere with synthesis.
   - They mimic the effect of neurotransmitters. This causes the neurons to fire in the absence of the neurotransmitter.
   - They alter the permeability of the cell membrane. This interferes with the metabolic processes in the neurons.

3. Their effect depends on dosage. There are varied degrees to the changes that are seen in behaviour. The range is from no change, with a low dosage, to toxicity or poisoning, with a high dosage.

4. Their effects are altered by prior experience with the psychoactive drug. Few of them produce the same effects in experienced users as they do in new users.

5. Their effects depend on what the user expects will happen. This is especially so with alcohol and marijuana.

6. They can be habit forming. If a psychoactive drug produces pleasurable effects, some people choose to repeat the experience. During this time, their bodies adapt to the presence of the psychoactive drug.

7. They can sometimes stay attached to receptor sites and bind better to these sites than normal neurotransmitters. This is why some psychoactive drugs have an intense impact on the body and bodily processes.

Drug Classifications

Psychoactive drugs are classified into different groups. Generally speaking, the psychoactive drugs are put into these groups based on their effects. There are some, however, that belong to two different categories.

There are five categories of psychoactive drugs:

- depressants (which include alcohol and sedatives)
- opiates (which include heroin, morphine, methadone, and codeine)
- stimulants (which include caffeine, nicotine, cocaine, and amphetamines)
- hallucinogens (which include LSD and Ecstasy)
- marijuana

Depressants

Depressants lower the overall level of activity in the nervous system. They produce relaxation or sluggish behaviour. In large doses, they can produce a coma or death.

The depressant drugs are:

- alcohol
- sedatives

Alcohol

Alcohol is the most familiar drug in our society. Ethyl alcohol or ethanol is the type of alcohol that is found in alcoholic drinks. It is a depressant. This means that it slows down your brain functioning. It can be man-made or produced when fruits, vegetables, or grains ferment.

Another kind of alcohol is called methyl alcohol or methanol. It is found in some household and industrial products like hairspray and antifreeze. It is poisonous to drink.

Did you know that it takes one to two hours for an adult liver to break down the alcohol in one drink? If a person drinks more than this, the alcohol builds up in the body. If you have two drinks in one hour, then it could take up to four hours for the body to get rid of the alcohol.

In the short term, alcohol use may cause

- feelings of relaxation and sociability
- drowsiness, dizziness, and flushing
- a person to do things which they would not normally do
- poor decision making
- trouble walking or moving
- slurred speech and blurred vision
- lowered blood pressure, breathing, and pulse rates
- aggressive or violent behaviour
- an inability to remember what one did or said (This is called a blackout.)
- a person to pass out and lose consciousness

In the long term, alcohol use may cause

- skin problems and stomach ulcers
- vitamin deficiencies
- decreased sperm production, impotency (the inability to have sexual intercourse), and infertility (the inability to have children)
- mood and emotional changes
- brain damage and memory loss
- liver damage, heart problems, and circulatory problems

Drinkers can become psychologically dependent because they feel that they need the alcohol in order to function. They can also become physically dependent because their body reacts adversely to the absence of alcohol. The more the person drinks, the more the person builds up a tolerance.

When mixed with other drugs, alcohol can be very dangerous. Drinking a lot of alcohol very quickly is called chugging. This is usually done in drinking games. Drinking five or more drinks for males and four or more drinks for females is called bingeing. Chugging and bingeing can cause alcohol poisoning that results in vomiting, passing out, and sometimes death. Immediate medical care is needed if a person shows signs of alcohol poisoning.

Sedatives

Sedatives, also called **hypnotics** and **tranquilizers**, are drugs that reduce the activity level of neurons. This results in sluggish movement, relaxed muscles, and a sleepy state of consciousness.

The drugs that belong in this category include the following:

- PCP (phencyclidine) also known as angel dust
- barbiturates which were previously used in sleeping pills
- methaqualone (for example, Quaaludes) which are muscle relaxants

Because barbiturates can be lethal, interact with alcohol, impair memory and judgment, and are highly addictive, they have been replaced with newer forms of sedatives known as **benzodiazepines**. Valium and Xanax are examples. These are safer than barbiturates. Nonetheless, they can still create dependency.

In the short term, benzodiazepine use may cause

- an irregular heartbeat
- a fever
- feelings of drowsiness and tiredness
- feelings of weakness
- blurred vision
- dry mouth
- diarrhea, upset stomach, or constipation
- difficulty breathing or swallowing
- changes in appetite
- restlessness or excitement
- tremors or the inability to sit still
- difficulty urinating
- a severe skin rash

In the long term, benzodiazepine use may cause

- poor memory
- depression
- confusion and disorientation
- the inability to feel emotional pleasure or pain

If benzodiazepines are combined with other depressant drugs, such as alcohol, a fatal overdose can occur.

Opiates

Opiates can be obtained from the poppy or can be synthetically made.

Examples of drugs that are in this category are as follows:

- heroin
- synthetic painkillers (e.g., OxyContin)
- morphine
- methadone
- codeine

Opiates are also called **narcotics**.

Opiates depress neural activity and temporarily lesson pain and anxiety. If they are used under a doctor's care, they can relieve pain without after-effects.

The active ingredient in opium is morphine. Morphine is a strong sedative and pain-relieving drug. Morphine works by preventing neurons from firing and releasing pain-signaling neurotransmitters into the synapse. This is why the pain messages can't travel to the brain.

Your body naturally produces endorphins, which are neurotransmitters that are linked to pain control and pleasure. Our bodies naturally release endorphins when we experience trauma or long-term strain.

Morphine acts as an agonist for endorphins. This means that opiates boost the effects of the neurotransmitters, making them strong painkillers and mood elevators. Opiates cause drowsiness and euphoria associated with the endorphin levels.

In the short term, opiate use may cause

- relief from pain
- very small pupils
- slowed breathing
- drowsiness
- increased urination
- feelings of euphoria
- nausea, vomiting, and constipation
- impaired judgment and coordination

In the long term, opiate use may cause

- chronic constipation
- muscle weakness
- weight loss and malnutrition
- impotency, decreased sperm production, and menstrual irregularities
- lung congestion
- heart and circulatory problems

Opiate overdose can be lethal and can occur after the first use. This is as a result of the heart and lung functions slowing down to the point of stopping completely. People who inject opiates are at risk for HIV, AIDS, and hepatitis.

The opiates are some of the most physically addictive drugs because they rapidly change brain chemistry and create tolerance and withdrawal symptoms. Withdrawal symptoms may include about a week's worth of intense pain, hyperventilation, depression, high blood pressure, and diarrhea.

Synthetic painkillers, such as **OxyContin**, are a central nervous system depressant. They are used medically as prescription painkillers to control moderate to severe pain, chronic pain, and pain related to cancer. If taken at the same time as alcohol, they can cause serious and potentially fatal problems.

Tolerance to drugs such as OxyContin develops quickly and physical dependence is possible.

Stimulants

Stimulants are drugs that raise the general level of activity in the nervous system. Commonly known stimulants include the following:

- caffeine
- energy drinks
- nicotine
- cocaine
- amphetamines

Stimulants increase alertness and activity. In large amounts, they cause nervousness, shaking movements or jitters, insomnia, and irregular heartbeats. They can also sometimes cause anxiety or panic states that are accompanied by hyperventilation and lightheadedness. The heart rate increases, nerve cells fire more easily, and a person reacts more quickly or intensely to challenging situations.

Stimulants mimic the function of the adrenal cortex in the brain that secretes adrenaline or epinephrine into the bloodstream.

Caffeine

Caffeine is the most widely used stimulant drug. Heavy coffee drinking (more than five cups a day) can lead to irregular heartbeats, insomnia, and nervousness.

Caffeine produces a state of wakefulness and alertness. When you are awake, you accumulate the chemical **adenosine** in your body. Adenosine inhibits the arousal-producing neurons in the brainstem and has a direct role in making us drowsy and inattentive when we are deprived of sleep. Caffeine has a molecular shape that is similar to adenosine. It occupies the same receptor sites so caffeine cuts the effects of adenosine and restores alertness.

Like other psychoactive drugs, sensitization and tolerance occur. Tolerance occurs when caffeine is taken in regular, high doses. The effect of the caffeine is reduced when this happens. Caffeine has the largest effect if it is used only occasionally or moderately. In a heavy user, it produces less effect. That is why a person who seldom drinks coffee may experience insomnia after having a cup of coffee at dinner, while a person who drinks a lot of coffee may be able to have a cup before bed with little effect.

Nicotine

Nicotine is the active ingredient in tobacco. The stimulating effects of nicotine are the same as those for caffeine. Because nicotine is a stimulant, it increases energy and alertness. When smokers haven't had a cigarette for a while, they may go into withdrawal and feel jumpy. Smoking makes them feel calm and gets rid of the withdrawal symptoms.

In the short term, nicotine use may cause

- a short high—which lasts a few minutes to a half an hour and is then followed by a period of relaxation
- increased heart rate and faster breathing due to higher levels of carbon monoxide in the blood (This makes the heart work harder because it can't carry oxygen.)
- increased ability to concentrate
- relief from depressed feelings
- dizziness, coughing, diarrhea, and vomiting
- a reduced appetite

In the long term, nicotine use may cause

- mood swings and lack of energy
- illness from various cancers
- chronic bronchitis and emphysema
- heart disease and stroke
- a weakened immune system
- digestive system problems
- problems with the healing of cuts and wounds

Smokers can be psychologically dependent as well as physically dependent on nicotine. People who smoke do not develop a tolerance for nicotine. This means that they don't need more to get the same effect.

Withdrawal symptoms may include a loss of energy, feelings of depression, trouble concentrating, nervousness, irritability, headaches, and sleeping problems.

Cocaine

Cocaine is a stimulant that comes from the coca plant. Cocaine crystals are called **crack**. Cocaine acts directly on the dopamine-using areas of the brain by blocking the reabsorption of dopamine into the sending neurons at the synapse. The cocaine high from the excess of dopamine quickly wears off.

The dopamine is eventually absorbed by the body, though this is not done very quickly. The neurons that produce pleasure messages no longer work properly. The user becomes instantly dependent and craves more cocaine.

This has an enormous effect on the cardiovascular system which can, in some cases, lead to stroke or instant death. Users may also experience feelings of paranoia and suspiciousness.

In the short term, cocaine and crack use may cause

- enlarged pupils, dry mouth, and stuffy nose
- feelings of euphoria
- energy, alertness, less of a need to eat and sleep
- increased heart rate, blood pressure, and breathing
- anxiety, unpredictable or violent behaviour, and hearing or seeing things that aren't really there
- headaches, chest pain, muscle spasms, nausea, and fever

In the long term, cocaine and crack use may cause

- chapped skin under the nose
- throat and lung irritations
- headaches
- sexual dysfunction
- memory, attention, and behaviour problems
- weight and appetite loss
- tooth decay
- weakened immune system
- seizures, heart problems, or stroke
- intense depression
- paranoia and hallucinations

Regular users of cocaine and crack can rapidly develop a powerful psychological and physical dependence. Tolerance does occur in some people. The withdrawal symptoms may include excessive sleep, depression, anxiety, hunger, irritability, and intense cravings.

Amphetamines

Amphetamines are referred to as speed and uppers. A derivative of amphetamines is **methamphetamines** or **crystal meth**.

They stimulate neural activity, speed up body functions, and are associated with energy and mood changes. Some people have reported that they could stay awake for twelve days at a time, eat very little, and engage in nervous activity. After that, they would crash and sleep for days on end. Most users have thin arms and legs because of the lack of nutrition. In fact, what their bodies are doing is digesting their own muscles.

Amphetamines mimic the effects of adrenaline. This is a neurotransmitter that stimulates body functions. Amphetamines force the release of **adrenaline** which would naturally be stored for a time when it is needed.

Repeated use of methamphetamines is associated with violent behaviour and paranoia. This can cause long-lasting decreases in **dopamine** and **serotonin** in the brain which are never restored to normal.

In the short term, amphetamine use may cause

- an intense rush after smoking or injecting
- more energy and more alertness
- feelings of extreme joy and excitedness
- a reduction in hunger
- dry mouth and cracked lips
- big pupils and rapid eye movements
- flushed and clammy skin
- increased heart rate and blood pressure
- shortness of breath
- trouble speaking
- aggressive behaviour
- convulsions, and high body temperature and blood pressure
- a stroke which can lead to death

In the long term, amphetamine use may cause

- sores on the body from scratching imaginary bugs
- damage to the inside of the nose
- blurred vision and dizziness
- feelings of rage
- weight loss
- anxious feelings and the inability to get to sleep
- psychotic episodes, paranoia, and hallucinations
- hyperactivity

Continued use of amphetamines depletes the normal level of neurotransmitters. People who use amphetamines can become psychologically and physically dependent on the drug. Tolerance occurs quickly and more and more is needed to get the same effects. Withdrawal symptoms include depression, anxiety, tiredness, paranoia, and feelings of aggressiveness. Psychotic symptoms, where the person doesn't know what is or isn't real, and depressive symptoms may continue for months or even years after drug use has stopped.

Hallucinogens

Hallucinogens are also called **psychedelic** drugs. Some examples include the following:

- LSD (lysergic acid diethylamide)
- ecstasy
- mescaline (which is found in peyote buttons)
- Psilocybin (which is found in psychoactive mushrooms)

Hallucinogens cause a dreamlike state that has dramatic changes in thought and emotion. The state is similar to a waking dream or a temporary psychosis. Hallucinogens sometimes cause hallucinations.

The effects are caused by the reduction in the neurotransmitter serotonin. Some amount of these drugs remains in the body for weeks. If the user ingests the drugs again, the new dose of the chemical is added to the lingering amount creating more dangerous effects.

LSD

LSD is the most powerful drug known to science because, even in small amounts, the effects are powerful. LSD users report being on an "acid trip" where there are visual distortions, panic attacks, and a detachment from reality. These trips range from mildly unpleasant to deadly. The user is unable to distinguish reality from what is not reality. The user can then be dangerous to him- or herself and to others.

In the short term, LSD use may cause

- dilated pupils
- loss of appetite
- dizziness
- nausea, chills, and sweating
- increased heart rate, blood pressure, body temperature, and rapid breathing
- feelings of power
- rapid mood swings
- bizarre behaviour
- time distortions and hallucinations

In the long term, LSD use may cause

- decreased motivation
- panic
- irrational behaviour
- permanent distortion of reality
- depression

Some people may experience flashbacks after using LSD. This is when they experience the effects of the drugs without having taken the drug. This can occur years after LSD use.

Physical dependence on LSD does not appear to occur but psychological dependence does and tolerance develops quickly. On some rare occasions, a psychotic experience may be triggered.

Ecstasy

Ecstasy or MDMA (methylenedioxymethamphetamine) is a drug that produces symptoms similar to LSD.

In the short term, ecstasy use may cause

- a strong sense of pleasure and confidence
- increased feelings of sociability
- excess energy or intense relaxation
- a sense of alertness
- dry mouth and throat, nausea or vomiting, and loss of appetite
- an increase in heart rate, blood pressure, and breathing
- muscle cramping
- dilated pupils and blurred vision
- clenching of jaw muscles, teeth grinding, and jaw pain
- sweating or chills
- distortions in thinking
- anxiety, paranoia, or panic attacks
- hallucinations

In the long term, Ecstasy use may cause

- forgetfulness, poor concentration, and depression
- fatigue, sleep disturbances, confusion, panic, anxiety, and paranoia
- liver damage
- dehydration and an increase in body temperature resulting in muscle breakdown, as well as heart and kidney failure

Physical dependence on ecstasy is not generally a problem; however, psychological dependence and craving can lead to chronic use. Tolerance develops quickly and, on rare occasions, a psychotic experience may be triggered.

Mescaline

Mescaline comes from the peyote cactus. The hallucinogenic effects of mescaline can last up to fourteen hours.

In the short term, mescaline use may cause

- dilated pupils, sweating, garbled speech, disorientation, confusion, and impaired coordination
- nausea and vomiting
- increased heart rate, blood pressure, and body temperature
- time and space distortions
- altered perception and mood
- distorted reality
- intensified colours and images
- hallucinations

In the long term, mescaline use may cause

- lowered blood pressure and difficulty breathing
- cuts in the esophagus due to vomiting
- intense feelings of paranoia and anxiety

Physical dependence on mescaline is not generally a problem; however, psychological dependence can lead to chronic use. Tolerance develops quickly and, on rare occasions, a psychotic experience may be triggered.

Psilocybin

Psilocybin comes from certain mushrooms. The species can be found in the wild and harvested or grown indoors. The hallucinogenic effects of the mushrooms are usually felt thirty to sixty minutes after ingesting them.

In the short term, "magic mushroom" use may cause

- relaxed or tired feelings
- mood swings
- a changed sense of space, time, and consciousness
- feelings of being very heavy or very light
- changes in sight, smell, sound, taste, and touch
- hallucinations
- confusion or paranoia
- a mild increase in blood pressure, heartbeat, and breathing
- dizziness, light-headedness, upset stomach, nausea, shivering, or sweating
- numbness of the tongue, lips, or mouth
- dilated pupils

Little is known about the long-term effects of magic mushroom use.

Users may become psychologically dependent and tolerance builds up after a period of daily use. In fact, the user can eventually get to a point where no amount of the drug will get him or her high.

Marijuana

Marijuana is in a category all its own because it doesn't resemble other drugs in chemical structure or effect. For example, the behavioural effects of marijuana are like that of low doses of alcohol but they are unlike the effects of high doses of alcohol. It also produces mild hallucinations, so it is not like LSD.

The active ingredient in marijuana is **THC** (tetrahydrocannabinol). It comes from the cannabis or hemp plant. THC causes a lowering of inhibitions, relaxation, mild euphoria, and a heightened sensitivity to tastes, smells, and sounds.

Marijuana achieves its effect by altering the level of a particular type of brain chemical called anandamide which is found in the frontal lobes and the hippocampus.

In the short term, marijuana use may cause

- red eyes and lowered skin temperature
- increased heart rate and blood pressure
- drowsiness and slowed speech
- a slow reaction time
- poor coordination
- concentration and memory problems
- feelings of extreme pleasure, giggling, and laughter
- a person to hear, see, and feel things differently
- colours to seem brighter
- emotions to be more intense
- a strong desire for food
- a feeling that time is going slowly or quickly
- a feeling of being separated from reality
- feelings of panic or paranoia
- dizziness or fainting

In the long term, marijuana use may cause

- short-term memory problems
- learning and problem-solving difficulties
- breathing problems
- immune system problems
- reproductive system problems
- fearfulness and anxiety
- decreased motivation, low energy, and loss of interest in life

People who use marijuana regularly can develop a tolerance, so that more is needed to get the same effect. Users can become both psychologically and physically dependent.

Withdrawal symptoms can include trouble sleeping, irritability, loss of appetite, restlessness, anxiety, sweating, chills, and mild nausea.

THC can stay in the body for months. For this reason, the user needs less and less to get the same effects.

Did you know that

- the smoke from marijuana is harder on the lungs than cigarette smoke
- with large doses of marijuana there is acceleration in the loss of brain cells
- even after the effects of marijuana have worn off, memory is still impaired
- with marijuana use the immune system is suppressed making it harder to fight off disease and infection
- marijuana damages the structure of the hair on your body
- THC can counteract the nausea that comes with chemotherapy
- THC can lessen the side effects of AIDS

Why do people still choose to use psychoactive drugs despite all the information that is available? Are there ways to help prevent the use of dangerous psychoactive drugs?

Prevention

Three things that help prevent the use of dangerous psychoactive drugs are

1. having a clear understanding of the long-term effects of drug use
2. being in an environment that increases self-esteem
3. associating with peers who disapprove of drug use

It is important to be part of the solution to drug use, not the problem.

Learning Activity 4.8: Psychoactive Drugs

Psychoactive drugs have both pleasant effects and unpleasant effects. Complete the table below. The first one is done for you.

Drug	Classification	Pleasant Effects	Unpleasant Effects
Alcohol	Depressant	Initial high followed by relaxation and a lowering of inhibitions	Depression, memory loss, organ damage, and impaired reactions
Heroin			
Caffeine			
Methamphetamines			

Drug	Classification	Pleasant Effects	Unpleasant Effects
Cocaine			
Nicotine			
Ecstasy			
Marijuana			

Check the answer key.

Lesson Summary

Psychoactive drugs are those that affect your state of consciousness. They are classified according to their effects.

- Depressants reduce activity.
- Opiates reduce pain and produce a numb feeling.
- Stimulants increase activity.
- Hallucinogens produce a state resembling a waking dream.
- Marijuana is not similar to the others in chemical nature and does not have the same effects as drugs in the other categories.

In this lesson, drug dependency, how the different drugs work, and how the drugs are classified was discussed.

Some people take psychoactive drugs or drugs that affect their state of consciousness. While some people are prescribed drugs, others use drugs illegally. The lesson ended with some tips on how to prevent the use of dangerous drugs.

L E S S O N   9 :   I N T E L L I G E N C E

Lesson Introduction

In Lesson 5, we explored thinking and language (two things humans are capable of). Another thing that humans possess is intelligence. What exactly is intelligence and where does it come from? How is it measured and are there ethnic or gender differences in intelligence scores? In this lesson, the answers to these questions will be provided. Different theories of intelligence will be explored with a focus on Howard Gardner's theory of multiple intelligences.

Nature of Intelligence

Intelligence is the ability to learn from experience, solve problems, and use knowledge to adapt to new situations. However, this has not always been the definition. In fact, it has evolved over time. The many definitions of intelligence have included the following:

■ Charles Spearman viewed intelligence as "g", a general cognitive ability. It is measured by every task on an intelligence test.

■ L.L. Thurstone viewed it as seven distinct mental abilities.

■ J.P. Guilford viewed it as 120 or more separate abilities.

■ Raymond Cattell viewed it as two types of "g": fluid intelligence and crystallized intelligence.

Fluid intelligence is our ability to reason quickly and abstractly. It tends to decrease as we get older.

Crystallized intelligence is the knowledge that we have accumulated over time. It tends to increase with age.

The above definitions define intelligence as one thing. Three modern psychologists—Robert Sternberg, Howard Gardner, and Daniel Goleman—have redefined intelligence as being made up of **multiple intelligences**.

Robert Sternberg

Sternberg believes that there are three types of intelligence: analytic intelligence, creative intelligence, and practical intelligence.

1. **Analytic intelligence** is the kind of intelligence that helps us do things like analyze, compare, and evaluate. It is the kind of intelligence that is stressed in school.

2. **Creative intelligence** is the kind of intelligence that helps us create, invent, and design. It helps us come up with new ideas and adapt to new situations.

3. **Practical intelligence** is the kind of intelligence that helps us complete necessary tasks. It is our common sense.

Howard Gardner

Gardner believes that there are at least eight different kinds of intelligence. He came up with his theory by looking at research involving people who had brain damage. These people may have lost one ability but they did not lose the other abilities. He also saw evidence of multiple intelligences in people who have **savant syndrome**. This is a condition in which people, who may be limited in mental ability and may not even have language ability, have an exceptional specific skill, like drawing or computation.

Gardner's theory of multiple intelligences includes the following:

Verbal-linguistic: This is the kind of intelligence that helps us with reading comprehension and writing. Poets and authors often possess this type of intelligence.

Logical-mathematical: This is the kind of intelligence that helps us solve mathematics and logic problems. Scientists and mathematicians often possess this type of intelligence.

Bodily-kinesthetic: This is the kind of intelligence that helps us with balance, strength, and endurance. Dancers and athletes often possess this type of intelligence.

Visual-spatial: This is the kind of intelligence that helps us judge distance, read maps, and do geometry. Artists often possess this type of intelligence.

Musical-rhythmic: This is the kind of intelligence that helps us appreciate and create music, and understand music theory. Composers and musicians often possess this type of intelligence.

Interpersonal: This is the kind of intelligence that helps us with listening skills, cooperation, and sensitivity to others. World leaders often possess this type of intelligence.

Intrapersonal: This is the kind of intelligence that helps us to know ourselves. Psychiatrists often possess this type of intelligence.

Naturalist: This is the kind of intelligence that helps us appreciate nature and gives us the ability to work with plants and animals. Naturalists often possess this type of intelligence.

Critics of Gardner's theory believe that he moved beyond what is normally considered to be intelligence (mental ability) to include things that should be considered skills or talents.

Daniel Goleman

Goleman, in his theory of intelligence, distinguishes between academic intelligence and emotional intelligence. Emotional intelligence has the following four components:

1. the ability to perceive emotions (ability to recognize emotion in faces, music, and stories)
2. the ability to understand emotions (ability to predict emotion and how it changes)
3. the ability to manage emotions (ability to express emotion in different situations)
4. the ability to use emotion for creative thinking

People with high emotional intelligence are more in touch with their feelings, tend to be more optimistic, and get along well with others.

Now that we have examined different theories of intelligence, it is time to see how intelligence is measured.

Intelligence Testing

In order for any test (including an intelligence test) to be useful, it is necessary for the test to be standardized, reliable, and valid.

- **Standardization** is the process of administering the test to a large number of people in order for the norm or the average to be documented. It also includes the procedures for administering the test so that everyone does it the same way.

- **Reliability** is a measure of how stable the test scores are over time. Good tests will give you similar results if you give the test to the same person but at different times.

- **Validity** refers to how well the test measures what it is supposed to measure. Intelligence quotient tests (IQ tests) are considered valid if a person's score is similar on two different tests that measure the same thing (for example, memory for a sequence of numbers).

IQ tests are not intended to measure overall intelligence. They are intended to measure verbal and nonverbal abilities needed for school success. There are many IQ tests; however, the major ones are the Stanford-Binet and the Wechsler. Three psychologists are recognized for developing these IQ tests. They are Binet, Terman, and Wechsler.

Alfred Binet developed the first test to assess children's ability to succeed in school. He believed that intelligence is mainly determined by the environment. He used the idea of **mental age**. This means that a ten-year-old who answers questions that a typical ten-year-old would answer would have a mental age of ten. The actual age of the child doesn't matter. The actual age is called the **chronological age**.

Lewis Terman adapted Binet's test at Stanford University. He called the new test the **Stanford-Binet**. Terman believed that intelligence is inherited and is firmly fixed. The Stanford-Binet measures verbal abilities in children aged three to sixteen.

David Wechsler designed a series of tests that measure verbal and non-verbal abilities separately and for different age groups (including adults, children, and preschoolers). The **Wechsler Intelligence Scale for Children (WISC)** is commonly used in our own school system and may be helpful in the processes of identifying learning disabilities.

Most standardized tests, as you'll remember from Module 1, result in a normal distribution (bell-shaped curve).

Figure 4.8   **Normal Distribution**

| 14% of the scores fall between one and two standard deviations below the mean | 34% of the scores fall between the mean and one standard deviation below & above this value | 14% of the scores fall between one and two standard deviations above the mean |

High

Frequency of Each Score

Low

| 3 | 4 | 5 | 6 | 7 |
| Two Standard Deviations below the Mean | One Standard Deviation below the Mean | Mean | One Standard Deviation above the Mean | Two Standard Deviation above the Mean |

In a normally distributed population, 68% of people fall within one standard deviation of the mean, 95% of people fall within two standard deviations of the mean, and 99.7% of people fall within three standard deviations of the mean, where the mean is a score of 100.

How do you test for multiple intelligences?

There are a number of inventories available to help you determine your strengths. Many intelligence tests can be found on the Internet.

Traditional intelligence tests have been criticized for being biased in favour of the Caucasian middle-class population. This has led psychologists to develop tests that avoid questions that depend on a particular cultural background. These tests are referred to as **culture-fair tests**.

Learning Activity 4.9: Nature and Nurture of Intelligence

Intelligence seems to run in families. Is this because our intellectual abilities are mostly inherited or is it because they are influenced by the environment? Does this issue sound familiar? It is the nature and nurture issue.

Read the following true statements about intelligence. For each one, think about whether the statement supports a nature theory of intelligence, a nurture theory of intelligence, or either theory.

■ **nature** theory of intelligence (genes and biology determine intelligence)

■ **nurture** theory of intelligence (experience and environment determine intelligence)

■ **either** (could be explained by either the nature or the nurture theory)

1. Boys outnumber girls in both the lowest extremes of intelligence test scores and the highest extremes. _____

2. Boys outnumber girls in special education classes. _____

3. Boys score higher than girls (on average) on the math portion of the Scholastic Aptitude Test (SAT), which is a test administered to everyone who wants to attend college or university in the United States. _____

4. Children whose birthdate falls right before the cut-off for kindergarten score higher on intelligence tests than those whose birthdate falls right after. _____

5. Genes that influence intelligence have been identified in both humans and mice. _____

6. Girls are more verbally fluent than boys and they are more sensitive to touch, taste, and odour. _____

7. Programs for disadvantaged youth have led to higher intelligence test scores, higher achievement test scores, and a lower likelihood of repeating a grade. _____

8. Intelligence scores drop in summer (when students are out of school). _____

9. Intelligence test performance of today's population exceeds that of the 1930's population. _____

Learning Activity 4.9: Nature and Nurture of Intelligence (continued)

10. Intelligence test scores of identical twins reared together are more similar than those of fraternal twins reared together. _____

11. Malnutrition, sensory deprivation, and social isolation all slow down normal brain development. _____

12. Over time, intelligence test scores of adopted children become more like those of their biological parents and less like their adoptive parents. _____

13. People who score higher on intelligence tests are more likely to have high levels of education and income. _____

14. Racial groups differ in their average scores on intelligence tests. _____

15. The math grades of boys and girls are roughly the same. _____

16. The racial gap in scores increases gradually with the largest gap appearing between Grade 8 and early high school. _____

17. There is no difference in overall intelligence scores between males and females. _____

18. Females are better than males (on average) at recognizing emotions. _____

It is obvious that heredity (nature) and environment (nurture) interact to impact the intellectual functioning of individuals.

Check the answer key.

Lesson Summary

Intelligence is the ability to learn from experience, solve problems, and use knowledge to adapt to new situations.

Both Sternberg and Gardner have proposed theories of multiple intelligences rather than one underlying general intelligence factor, as proposed by Spearman. Goleman has even suggested a separate emotional intelligence.

Intelligence can be measured using IQ tests developed by Terman (the Stanford-Binet) and Wechsler.

Based on the research on intelligence, it appears that both heredity and environment influence intelligence.

Assignment 4.5: Gardner's Theory of Multiple Intelligences (16 marks)

Below is a list of Gardner's eight intelligences. For each one, name a famous person who you believe is gifted in that area. *(1 mark)*

Explain why you made your choice. *(1 mark)*

Some famous people that you can choose are: David Suzuki, President Obama, Brittney Spears, Bill Gates, Mother Theresa, and the astronaut John Glenn.

1. **Verbal-linguistic** (This person has the ability to use language and is sensitive to the order of things. This person can also argue, persuade, entertain, or instruct through the spoken word.)

   Who and why? _____
   _____
   _____
   _____

2. **Logical-mathematical** (This person has the ability to see the intelligence of numbers and logic, as well as the ability to handle chains of reasoning and to recognize patterns and order. This person can also think in terms of cause and effect and can create and test hypotheses.)

   Who and why? _____
   _____
   _____
   _____

3. **Musical-rhythmic** (This person is sensitive to pitch, melody, rhythm, and tone. This person can also sing in tune, keep time to music, and listen to musical selections with discernment.)

   Who and why? _____
   _____
   _____
   _____

4. **Bodily-kinesthetic** (This person has the ability to use the body skillfully and handle objects. This person is a hands-on kind of person.)

   Who and why? _____
   _____
   _____
   _____

Assignment 4.5: Gardner's Theory of Multiple Intelligences (continued)

5. **Visual-spatial** (This person has the ability to perceive the world accurately and to recreate or transform aspects of that world. This person often has a heightened sensitivity to visual details, can draw his or her ideas, and can orient him- or herself easily in three dimensional spaces.)

   Who and why? _____
   _____
   _____
   _____

6. **Interpersonal** (This person has the ability to understand people and relationships. This person can perceive and respond to moods, temperaments, intentions, and the desires of others.)

   Who and why? _____
   _____
   _____
   _____

7. **Intrapersonal** (This person can access one's emotional life as a means of understanding oneself and others. This person can easily access his or her own feelings, discriminate among different emotional states, and use this to enrich and guide his or her own life.)

   Who and why? _____
   _____
   _____
   _____

8. **Naturalist** (This person has the ability to work with plants and animals. This person can demonstrate an appreciation for nature and use this to come in close contact with plants and animals.)

   Who and why? _____
   _____
   _____
   _____

MODULE 4 SUMMARY

Congratulations. You have finished the fourth module of the course.

Submitting Your Assignments

It is now time for you to submit your assignments from Module 4 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 4 assignments and organize your material in the following order:

❑ Module 4 Cover Sheet (found at the end of the course Introduction)

❑ Assignment 4.1: Applying Classical Conditioning

❑ Assignment 4.2: Applying Learning to Your Life

❑ Assignment 4.3: What's Their Name

❑ Assignment 4.4: Sleeping Case Study

❑ Assignment 4.5: Gardner's Theory of Multiple Intelligences

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Notes

M ODULE 4

Learning Activity Answer Key

MODULE 4 LEARNING ACTIVITY
ANSWER KEY

Learning Activity 4.1: Classical Conditioning

Read the following situations and identify the following:

- UCS: unconditioned stimulus
- UCR: unconditioned response
- NS: neutral stimulus
- CS: conditioned stimulus
- CR: conditioned response

1. Your dog comes running when he hears the electric can opener.

   UCS: unconditioned stimulus: **food in the can**

   UCR: unconditioned response: **comes running**

   NS: neutral stimulus: **electric can opener**

   CS: conditioned stimulus: **electric can opener**

   CR: conditioned response: **comes running**

2. While listening to your car radio, you accidentally rear-end a blue car in front of you. Now, every time you see a blue car, your heart starts to race.

   UCS: unconditioned stimulus: **hit a car**

   UCR: unconditioned response: **heart races**

   NS: neutral stimulus: **blue car**

   CS: conditioned stimulus: **blue car**

   CR: conditioned response: **heart races**

Learning Activity 4.2: Reinforcement and Punishment

For each example below, identify whether positive reinforcement (PR), negative reinforcement (NR), or punishment (PUN) is illustrated by placing the appropriate abbreviation in the blank next to the item. The first three questions have been completed for you.

Consider the following information when completing this learning activity:

- **Positive reinforcement** occurs when a specific behaviour is followed by a desirable event or state (something that is desired).
- **Negative reinforcement** occurs when a specific behaviour ends an undesirable event or state (something that is undesired).
- **Punishment** is any consequence that decreases the likelihood of a specific behaviour. Punishment weakens a behaviour making it less likely to occur again in the future.

1. The police pull drivers over and give out prizes for buckling up. __PR__

   This is an example of positive reinforcement because the behaviour of wearing a seat belt is rewarded with a prize.

2. A basketball player is suspended for committing a foul. __PUN__

   This is an example of punishment because suspension is a consequence that will decrease the likelihood that the player will commit a foul again.

3. A child snaps her fingers until her teacher calls on her. __NR__

   This is an example of negative reinforcement because the behaviour of the teacher calling on the student ends the undesirable behaviour of the child snapping her fingers.

4. A soccer player rolls her eyes at a teammate who delivered a bad pass. __PUN__

5. A hospital patient is allowed extra visiting time after eating a meal. __PR__

6. A person receives a discount for participating in a recycling program. __PR__

7. A teenager is grounded until his or her homework is finished. __NR__

8. A child is scolded for playing in the street. __PUN__

9. A prisoner loses television privileges for one week because of a rule violation. __PUN__

10. A father nags his daughter to clean up her room. __NR__

11. A rat presses a lever to terminate a shock or a loud tone. __NR__

12. A teacher gives extra credit to students with perfect attendance. __PR__

13. A dog is sent to his doghouse after soiling the living room carpet. __PUN__

14. A defendant is harassed until he confesses. __NR__

15. A young child receives $5 for earning good grades in school. __PR__

16. A mother smiles when her child utters "Mama". __PR__

17. A child is given a "time-out" for misbehaving. __PUN__

18. The employee of the month gets a reserved parking space. __PR__

19. A husband becomes jealous when his wife flirts with his friend. __PUN__

20. A mother offers her child candy to play quietly. __PR__

Learning Activity 4.3: Reinforcement

Six everyday situations, in which some form of operant behaviour is occurring, are provided. After reading each scenario, indicate whether it is an instance of generalization or discrimination.

1. We stop our vehicles when the traffic light is red but we continue through the light when it is green. __discrimination__

2. We sit quietly in our seats during class examinations, church services, theatrical presentations, and funerals. __generalization__

3. We raise our hands before speaking in class but not while talking to a friend or while at a party. __discrimination__

4. We put our feet up on our desk and coffee table at home, but not on our grandparents' coffee table. __discrimination__

5. We mistake a stranger for a friend of ours. __generalization__

6. We answer the doorbell when it was really the phone that was ringing. __generalization__

Learning Activity 4.4: Operant Conditioning

Use the terms presented in the lesson to answer the following two questions in paragraph form.

1. Your neighbour can't understand why yelling at her ten-year-old son for misbehaving only seems to make the problem worse. Using what you know about operant conditioning, what advice would you give your neighbour about how she might reduce her son's disruptive behaviour and how she might encourage more appropriate behaviour.

    My neighbour's yelling could be reinforcing the undesirable behaviour of her son. Attention, in any form, can be a positive reinforcer. If you withhold the reinforcer (the yelling) the behaviour should extinguish itself. This has to be done consistently. My neighbour should encourage desirable behaviour. She should pay attention to any instance of good behaviour through praise or some other positive reinforcer. She should use a shaping technique and then use partial reinforcement to ensure that the desirable behaviour becomes resistant to extinction.

2. You have just adopted a puppy. Using what you know about operant conditioning, how could you train your puppy to be obedient and do some neat tricks?

    I want to train my puppy to sit when I say "sit". I will use a reinforcer such as "good dog "while patting him on his head or rubbing his chest. The command "sit"will be followed with gentle pressure on his rear end to make him sit. I will reinforce him immediately. After my puppy is obeying my command regularly I will switch to a partial reinforcement schedule. I will occasionally reward the puppy for obeying. I will then train my puppy to do some neat tricks in the same manner. I will also use shaping to get my puppy to do a series of behaviours.

Learning Activity 4.5: Test Your Memory

Part 1

The following are some of the more common reasons that students give for doing poorly on tests. Based on what you have learned about memory in this lesson, suggest one possible solution for each reason.

1. I just can't remember information when I take tests.

   Solution: **Rehearse the information. Review material over and over again until you remember it all. Get to the point of overlearning the material. Try teaching it to someone else.**

2. I remember the information when I'm studying but I forget it the day of the test.

   Solution: **Make sure that you can recall the information that you have learned, not just recognize it. You can do this by making tests for yourself, having someone else test you, or you test someone else. Take a break from studying and try the tests again to see if you still remember what you have learned.**

3. I can't even remember information while I am studying, much less during the test.

   Solution: **You need to chunk the information and then study one chunk at a time. Rehearse each chunk separately at first and then put them all together.**

4. My memory is so bad that I can't even remember three pieces of information.

   Solution: **Use mnemonic devices like acronyms, the method of loci, or a peg-word system.**

5. I remember things I read in a book but I can't remember the things I hear.

   Solution: **It appears that you remember better from visual cues than from auditory cues. Draw pictures, make graphs and charts, and use images to help with your learning.**

6. I remember every word that the teacher tells me, but I have trouble remembering what I read.

   Solution: **It appears that you remember better from auditory cues than from visual cues. Make up songs, rhymes, or raps to help you remember what you need to learn.**

7. I am just so bored with what I have to learn that I can't remember it.

   Solution: **Create meaning for what you need to learn. Use the self-reference effect. Be curious and ask questions regarding the material that you need to learn.**

Part 2

Think about all the information that has been presented in this course. More specifically, think about Modules 1, 2, and 3. Do you remember what topics were covered in those modules? Can you list them? If you can't, is the forgetting due to an encoding failure, a storage failure, or a retrieval failure?

Describe each of the following types of forgetting, referring specifically to an ability or inability to recall the topics that have been covered so far in this course.

There is no answer key for part 2 of this learning activity as you are to apply information covered in this lesson to a particular scenario.

Learning Activity 4.6: Thinking

Read the following examples of different types of problems or obstacles to solving the problem. Choose the word from the word bank that most closely applies. Some words may be used more than once.

Concept	Mental Image
Prototype	Trial and Error
Algorithm	Heuristic
Insight	Confirmation Bias
Functional Fixedness	Belief Perseverance

1. You are asked to decide which city is farther from Winnipeg. Regina or Thunder Bay? You try to picture a map of Canada to help you decide. __**Mental image**__

2. You have learned the rules to calculate the circumference and the area of a circle. __**Algorithm**__

3. You look at a sea horse and have trouble recognizing that it is a type of fish. __**Concept**__

4. You learn that one of your neighbour's children plays hockey. You assume that it is their son, not their daughter. __**Heuristic**__

5. You need to get into your friend's locker and you don't know the combination. You try every possible combination. __**Trial and error**__

6. You go away to winter camp and forget to take your pillow. It doesn't occur to you to use your down-filled parka as your pillow. Functional fixedness

7. You get a new DVD player and you spend a lot of time trying different approaches to programming the machine rather than reading the manual. __**Trial and error**__

8. You are having trouble coming up with a topic for your major paper in History class. However, one day while at the mall, you have a flash of inspiration. __**Insight**__

9. You heard that there is a new clothing store in your town. You decide to drive up and down every street until you find it. __**Heuristic**__

10. You hear about a terrorist attack and you think it is the same as 9/11. __**Heuristic**__

11. You have your heart set on buying a specific brand of television, no matter what anyone says about other brands. __**Belief perseverance**__

12. In Art class, you are asked to draw a restaurant scene. You draw a room with tables and chairs, waiters and waitresses, and food on the tables. __**Prototype**__

13. You tell your friend that the coffee shop close to your house has the best coffee. Your friend doesn't agree with you. To prove your point, you take your friend to four other coffee places. __**Confirmation bias**__

14. You have quite a buildup of ice on your car windshield and you can't find your window scraper. Your friend suggests that you use the plasticized identification card that you have in your wallet. __**Functional fixedness**__

15. Every time the picture on your television goes fuzzy, you hit the top of it to clear the picture. When you are over at a friend's house and their television goes fuzzy, you hit the top of it and nothing happens. __**Fixation**__

Learning Activity 4.7: Sleep Disorders and Problems

Read the following ten scenarios and decide from which sleep disorder or sleep problem the person is suffering.

1. Maryann has trouble staying asleep all night. She wakes up several times and has difficulty falling asleep again. __**Insomnia**__

2. Malcolm experiences panic, screaming, and thrashing around during the night. __**Night terrors**__

3. Lewis has irresistible urges to fall asleep, even when he is playing hockey. __**Narcolepsy**__

4. While my dad is sleeping, he often snores loudly and gasps for air. __**Sleep apnea**__

5. Salim is out with friends at a comedy club when he suddenly falls asleep. __**Narcolepsy**__

6. Ming often walks into the kitchen in the middle of the night and eats cake and cookies. When she wakes up the next morning, she doesn't remember doing it. __**Somnambulism**__

7. Now that Melissa has started university, she complains about the quality and duration of her sleep. __**Insomnia**__

8. George had a very frightening dream where someone was trying to kill him. He woke up suddenly and found that he was unable to move. __**Nightmares**__

9. My sister constantly grinds her teeth while she is sleeping. __**Bruxism**__

10. My roommate sometimes tells me that we have great conversations in the middle of the night while I am walking around. I don't remember doing this. __**Somnambulism**__

Learning Activity 4.8: Psychoactive Drugs

Psychoactive drugs have both pleasant effects and unpleasant effects.
Complete the table below. The first one is done for you.

Drug	Classification	Pleasant Effects	Unpleasant Effects
Alcohol	Depressant	Initial high followed by relaxation and a lowering of inhibitions	Depression, memory loss, organ damage, and impaired reactions
Heroin	**Depressant**	**Rush of euphoria and relief from pain**	**Depressed physiology and a painful withdrawal process**
Caffeine	**Stimulant**	**Increased alertness and wakefulness**	**Anxiety, restlessness and insomnia in high doses, and an uncomfortable withdrawal process**
Methamphetamines	**Stimulant**	**Euphoria, alertness, and energy**	**Irritability, insomnia, seizures**

Drug	Classification	Pleasant Effects	Unpleasant Effects
Cocaine	**Stimulant**	**Rush of euphoria, confidence and energy**	**Cardiovascular damage, stress, and a painful crash after use**
Nicotine	**Stimulant**	**Arousal, relaxation, and sense of well-being**	**Heart disease and cancer**
Ecstasy	**Hallucinogen**	**Euphoria, lowered inhibitions**	**Brain damage, depression, and fatigue**
Marijuana	**Depressant/Mild Hallucinogen**	**Enhanced sensation, relief from pain, distortion of time, and relaxation**	**Disrupted memory and lung damage**

Learning Activity 4.9: Nature and Nurture of Intelligence

Intelligence seems to run in families. Is this because our intellectual abilities are mostly inherited or is it because they are influenced by the environment? Does this issue sound familiar? It is the nature and nurture issue.

Read the following true statements about intelligence. For each one, think about whether the statement supports a nature theory of intelligence, a nurture theory of intelligence, or either theory.

- **nature** theory of intelligence (genes and biology determine intelligence)
- **nurture** theory of intelligence (experience and environment determine intelligence)
- **either** (could be explained by either the nature or the nurture theory)

1. Boys outnumber girls in both the lowest extremes of intelligence test scores and the highest extremes. ___**Either**___
2. Boys outnumber girls in special education classes. ___**Either**___
3. Boys score higher than girls (on average) on the math portion of the Scholastic Aptitude Test (SAT), which is a test administered to everyone who wants to attend college or university in the United States. ___**Either**___
4. Children whose birthdate falls right before the cut-off for kindergarten score higher on intelligence tests than those whose birthdate falls right after. ___**Nurture**___
5. Genes that influence intelligence have been identified in both humans and mice. ___**Nature**___
6. Girls are more verbally fluent than boys and they are more sensitive to touch, taste, and odour. ___**Either**___
7. Programs for disadvantaged youth have led to higher intelligence test scores, higher achievement test scores, and a lower likelihood of repeating a grade. ___**Nurture**___
8. Intelligence scores drop in summer (when kids are out of school). ___**Nurture**___
9. Intelligence test performance of today's population exceeds that of the 1930's population. ___**Either**___
10. Intelligence test scores of identical twins reared together are more similar than those of fraternal twins reared together. ___**Nature**___
11. Malnutrition, sensory deprivation, and social isolation all slow down normal brain development. ___**Nurture**___

12. Over time, intelligence test scores of adopted children become more like those of their biological parents and less like their adoptive parents.
    __**Nature**__

13. People who score higher on intelligence tests are more likely to have high levels of education and income. __**Nurture**__

14. Racial groups differ in their average scores on intelligence tests. __**Either**__

15. The math grades of boys and girls are roughly the same. __**Either**__

16. The racial gap in scores increases gradually with the largest gap appearing between Grade 8 and early high school. __**Either**__

17. There is no difference in overall intelligence scores between males and females. __**Nature**__

18. Females are better than males (on average) at recognizing emotions. __**Either**__

M ODULE 4

Learning Activity Answer Key

MODULE 4 LEARNING ACTIVITY
ANSWER KEY

Learning Activity 4.1: Classical Conditioning

Read the following situations and identify the following:

- UCS: unconditioned stimulus
- UCR: unconditioned response
- NS: neutral stimulus
- CS: conditioned stimulus
- CR: conditioned response

1. Your dog comes running when he hears the electric can opener.

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2. While listening to your car radio, you accidentally rear-end a blue car in front of you. Now, every time you see a blue car, your heart starts to race.

   UCS: unconditioned stimulus: **hit a car**

   UCR: unconditioned response: **heart races**

   NS: neutral stimulus: **blue car**

   CS: conditioned stimulus: **blue car**

   CR: conditioned response: **heart races**

Learning Activity 4.2: Reinforcement and Punishment

For each example below, identify whether positive reinforcement (PR), negative reinforcement (NR), or punishment (PUN) is illustrated by placing the appropriate abbreviation in the blank next to the item. The first three questions have been completed for you.

Consider the following information when completing this learning activity:

- **Positive reinforcement** occurs when a specific behaviour is followed by a desirable event or state (something that is desired).
- **Negative reinforcement** occurs when a specific behaviour ends an undesirable event or state (something that is undesired).
- **Punishment** is any consequence that decreases the likelihood of a specific behaviour. Punishment weakens a behaviour making it less likely to occur again in the future.

1. The police pull drivers over and give out prizes for buckling up. __PR__

   This is an example of positive reinforcement because the behaviour of wearing a seat belt is rewarded with a prize.

2. A basketball player is suspended for committing a foul. __PUN__

   This is an example of punishment because suspension is a consequence that will decrease the likelihood that the player will commit a foul again.

3. A child snaps her fingers until her teacher calls on her. __NR__

   This is an example of negative reinforcement because the behaviour of the teacher calling on the student ends the undesirable behaviour of the child snapping her fingers.

4. A soccer player rolls her eyes at a teammate who delivered a bad pass. __PUN__

5. A hospital patient is allowed extra visiting time after eating a meal. __PR__

6. A person receives a discount for participating in a recycling program. __PR__

7. A teenager is grounded until his or her homework is finished. __NR__

8. A child is scolded for playing in the street. __PUN__

9. A prisoner loses television privileges for one week because of a rule violation. __PUN__

10. A father nags his daughter to clean up her room. __NR__

11. A rat presses a lever to terminate a shock or a loud tone. __NR__

12. A teacher gives extra credit to students with perfect attendance. __PR__

13. A dog is sent to his doghouse after soiling the living room carpet. __PUN__

14. A defendant is harassed until he confesses. __NR__

15. A young child receives $5 for earning good grades in school. __PR__

16. A mother smiles when her child utters "Mama". __PR__

17. A child is given a "time-out" for misbehaving. __PUN__

18. The employee of the month gets a reserved parking space. __PR__

19. A husband becomes jealous when his wife flirts with his friend. __PUN__

20. A mother offers her child candy to play quietly. __PR__

Learning Activity 4.3: Reinforcement

Six everyday situations, in which some form of operant behaviour is occurring, are provided. After reading each scenario, indicate whether it is an instance of generalization or discrimination.

1. We stop our vehicles when the traffic light is red but we continue through the light when it is green. __discrimination__

2. We sit quietly in our seats during class examinations, church services, theatrical presentations, and funerals. __generalization__

3. We raise our hands before speaking in class but not while talking to a friend or while at a party. __discrimination__

4. We put our feet up on our desk and coffee table at home, but not on our grandparents' coffee table. __discrimination__

5. We mistake a stranger for a friend of ours. __generalization__

6. We answer the doorbell when it was really the phone that was ringing. __generalization__

Learning Activity 4.4: Operant Conditioning

Use the terms presented in the lesson to answer the following two questions in paragraph form.

1. Your neighbour can't understand why yelling at her ten-year-old son for misbehaving only seems to make the problem worse. Using what you know about operant conditioning, what advice would you give your neighbour about how she might reduce her son's disruptive behaviour and how she might encourage more appropriate behaviour.

   My neighbour's yelling could be reinforcing the undesirable behaviour of her son. Attention, in any form, can be a positive reinforcer. If you withhold the reinforcer (the yelling) the behaviour should extinguish itself. This has to be done consistently. My neighbour should encourage desirable behaviour. She should pay attention to any instance of good behaviour through praise or some other positive reinforcer. She should use a shaping technique and then use partial reinforcement to ensure that the desirable behaviour becomes resistant to extinction.

2. You have just adopted a puppy. Using what you know about operant conditioning, how could you train your puppy to be obedient and do some neat tricks?

   I want to train my puppy to sit when I say "sit". I will use a reinforcer such as "good dog "while patting him on his head or rubbing his chest. The command "sit"will be followed with gentle pressure on his rear end to make him sit. I will reinforce him immediately. After my puppy is obeying my command regularly I will switch to a partial reinforcement schedule. I will occasionally reward the puppy for obeying. I will then train my puppy to do some neat tricks in the same manner. I will also use shaping to get my puppy to do a series of behaviours.

Learning Activity 4.5: Test Your Memory

Part 1

The following are some of the more common reasons that students give for doing poorly on tests. Based on what you have learned about memory in this lesson, suggest one possible solution for each reason.

1. I just can't remember information when I take tests.

   Solution: **Rehearse the information. Review material over and over again until you remember it all. Get to the point of overlearning the material. Try teaching it to someone else.**

2. I remember the information when I'm studying but I forget it the day of the test.

   Solution: **Make sure that you can recall the information that you have learned, not just recognize it. You can do this by making tests for yourself, having someone else test you, or you test someone else. Take a break from studying and try the tests again to see if you still remember what you have learned.**

3. I can't even remember information while I am studying, much less during the test.

   Solution: **You need to chunk the information and then study one chunk at a time. Rehearse each chunk separately at first and then put them all together.**

4. My memory is so bad that I can't even remember three pieces of information.

   Solution: **Use mnemonic devices like acronyms, the method of loci, or a peg-word system.**

5. I remember things I read in a book but I can't remember the things I hear.

   Solution: **It appears that you remember better from visual cues than from auditory cues. Draw pictures, make graphs and charts, and use images to help with your learning.**

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7. I am just so bored with what I have to learn that I can't remember it.

   Solution: **Create meaning for what you need to learn. Use the self-reference effect. Be curious and ask questions regarding the material that you need to learn.**

Part 2

Think about all the information that has been presented in this course. More specifically, think about Modules 1, 2, and 3. Do you remember what topics were covered in those modules? Can you list them? If you can't, is the forgetting due to an encoding failure, a storage failure, or a retrieval failure?

Describe each of the following types of forgetting, referring specifically to an ability or inability to recall the topics that have been covered so far in this course.

There is no answer key for part 2 of this learning activity as you are to apply information covered in this lesson to a particular scenario.

Learning Activity 4.6: Thinking

Read the following examples of different types of problems or obstacles to solving the problem. Choose the word from the word bank that most closely applies. Some words may be used more than once.

Concept	Mental Image
Prototype	Trial and Error
Algorithm	Heuristic
Insight	Confirmation Bias
Functional Fixedness	Belief Perseverance

1. You are asked to decide which city is farther from Winnipeg. Regina or Thunder Bay? You try to picture a map of Canada to help you decide. ___**Mental image**___

2. You have learned the rules to calculate the circumference and the area of a circle. ___**Algorithm**___

3. You look at a sea horse and have trouble recognizing that it is a type of fish. ___**Concept**___

4. You learn that one of your neighbour's children plays hockey. You assume that it is their son, not their daughter. ___**Heuristic**___

5. You need to get into your friend's locker and you don't know the combination. You try every possible combination. ___**Trial and error**___

6. You go away to winter camp and forget to take your pillow. It doesn't occur to you to use your down-filled parka as your pillow. Functional fixedness

7. You get a new DVD player and you spend a lot of time trying different approaches to programming the machine rather than reading the manual. __**Trial and error**__

8. You are having trouble coming up with a topic for your major paper in History class. However, one day while at the mall, you have a flash of inspiration. __**Insight**__

9. You heard that there is a new clothing store in your town. You decide to drive up and down every street until you find it. __**Heuristic**__

10. You hear about a terrorist attack and you think it is the same as 9/11. __**Heuristic**__

11. You have your heart set on buying a specific brand of television, no matter what anyone says about other brands. __**Belief perseverance**__

12. In Art class, you are asked to draw a restaurant scene. You draw a room with tables and chairs, waiters and waitresses, and food on the tables. __**Prototype**__

13. You tell your friend that the coffee shop close to your house has the best coffee. Your friend doesn't agree with you. To prove your point, you take your friend to four other coffee places. __**Confirmation bias**__

14. You have quite a buildup of ice on your car windshield and you can't find your window scraper. Your friend suggests that you use the plasticized identification card that you have in your wallet. __**Functional fixedness**__

15. Every time the picture on your television goes fuzzy, you hit the top of it to clear the picture. When you are over at a friend's house and their television goes fuzzy, you hit the top of it and nothing happens. __**Fixation**__

Learning Activity 4.7: Sleep Disorders and Problems

Read the following ten scenarios and decide from which sleep disorder or sleep problem the person is suffering.

1. Maryann has trouble staying asleep all night. She wakes up several times and has difficulty falling asleep again. __**Insomnia**__

2. Malcolm experiences panic, screaming, and thrashing around during the night. __**Night terrors**__

3. Lewis has irresistible urges to fall asleep, even when he is playing hockey. __**Narcolepsy**__

4. While my dad is sleeping, he often snores loudly and gasps for air. __**Sleep apnea**__

5. Salim is out with friends at a comedy club when he suddenly falls asleep. __**Narcolepsy**__

6. Ming often walks into the kitchen in the middle of the night and eats cake and cookies. When she wakes up the next morning, she doesn't remember doing it. __**Somnambulism**__

7. Now that Melissa has started university, she complains about the quality and duration of her sleep. __**Insomnia**__

8. George had a very frightening dream where someone was trying to kill him. He woke up suddenly and found that he was unable to move. __**Nightmares**__

9. My sister constantly grinds her teeth while she is sleeping. __**Bruxism**__

10. My roommate sometimes tells me that we have great conversations in the middle of the night while I am walking around. I don't remember doing this. __**Somnambulism**__

Learning Activity 4.8: Psychoactive Drugs

Psychoactive drugs have both pleasant effects and unpleasant effects. Complete the table below. The first one is done for you.

Drug	Classification	Pleasant Effects	Unpleasant Effects
Alcohol	Depressant	Initial high followed by relaxation and a lowering of inhibitions	Depression, memory loss, organ damage, and impaired reactions
Heroin	**Depressant**	**Rush of euphoria and relief from pain**	**Depressed physiology and a painful withdrawal process**
Caffeine	**Stimulant**	**Increased alertness and wakefulness**	**Anxiety, restlessness and insomnia in high doses, and an uncomfortable withdrawal process**
Methamphetamines	**Stimulant**	**Euphoria, alertness, and energy**	**Irritability, insomnia, seizures**

continued

Drug	Classification	Pleasant Effects	Unpleasant Effects
Cocaine	**Stimulant**	**Rush of euphoria, confidence and energy**	**Cardiovascular damage, stress, and a painful crash after use**
Nicotine	**Stimulant**	**Arousal, relaxation, and sense of well-being**	**Heart disease and cancer**
Ecstasy	**Hallucinogen**	**Euphoria, lowered inhibitions**	**Brain damage, depression, and fatigue**
Marijuana	**Depressant/Mild Hallucinogen**	**Enhanced sensation, relief from pain, distortion of time, and relaxation**	**Disrupted memory and lung damage**

Learning Activity 4.9: Nature and Nurture of Intelligence

Intelligence seems to run in families. Is this because our intellectual abilities are mostly inherited or is it because they are influenced by the environment? Does this issue sound familiar? It is the nature and nurture issue.

Read the following true statements about intelligence. For each one, think about whether the statement supports a nature theory of intelligence, a nurture theory of intelligence, or either theory.

- **nature** theory of intelligence (genes and biology determine intelligence)
- **nurture** theory of intelligence (experience and environment determine intelligence)
- **either** (could be explained by either the nature or the nurture theory)

1. Boys outnumber girls in both the lowest extremes of intelligence test scores and the highest extremes. ___**Either**___
2. Boys outnumber girls in special education classes. ___**Either**___
3. Boys score higher than girls (on average) on the math portion of the Scholastic Aptitude Test (SAT), which is a test administered to everyone who wants to attend college or university in the United States. ___**Either**___
4. Children whose birthdate falls right before the cut-off for kindergarten score higher on intelligence tests than those whose birthdate falls right after. ___**Nurture**___
5. Genes that influence intelligence have been identified in both humans and mice. ___**Nature**___
6. Girls are more verbally fluent than boys and they are more sensitive to touch, taste, and odour. ___**Either**___
7. Programs for disadvantaged youth have led to higher intelligence test scores, higher achievement test scores, and a lower likelihood of repeating a grade. ___**Nurture**___
8. Intelligence scores drop in summer (when kids are out of school). ___**Nurture**___
9. Intelligence test performance of today's population exceeds that of the 1930's population. ___**Either**___
10. Intelligence test scores of identical twins reared together are more similar than those of fraternal twins reared together. ___**Nature**___
11. Malnutrition, sensory deprivation, and social isolation all slow down normal brain development. ___**Nurture**___

12. Over time, intelligence test scores of adopted children become more like those of their biological parents and less like their adoptive parents.
    Nature

13. People who score higher on intelligence tests are more likely to have high levels of education and income. **Nurture**

14. Racial groups differ in their average scores on intelligence tests. **Either**

15. The math grades of boys and girls are roughly the same. **Either**

16. The racial gap in scores increases gradually with the largest gap appearing between Grade 8 and early high school. **Either**

17. There is no difference in overall intelligence scores between males and females. **Nature**

18. Females are better than males (on average) at recognizing emotions. **Either**

Module 5

Variations in Individual and Group Behaviour

This module is divided into two topics. Each topic will have one or more lessons.

- Topic 1: Psychological Disorders and Treatments
  - Lesson 1: Introduction to Disorders
  - Lesson 2: Anxiety and Mood Disorders
  - Lesson 3: Dissociative, Somatoform, Schizophrenia, and Personality Disorders
  - Lesson 4: Treatment of Psychological Disorders
- Topic 2: Social and Cultural Dimensions of Behaviour
  - Lesson 5: Social Cognition and Social Influences
  - Lesson 6: Social Relations
  - Lesson 7: Cross-cultural Psychology
- Module 5 Summary
- Module 5 Learning Activity Answer Key

L ESSON 1: I NTRODUCTION TO D ISORDERS

Sensitive Content

Some of the content and issues pertaining to *Grade 12 Psychology* may be sensitive for some students and their parents, families, or communities. Such content is contained in this module. It is not recommended that you diagnose yourselves or others as you read this course. If you are concerned about your health, you should contact a physician or health care provider.

Lesson Introduction

Abnormal psychology is the study of people who suffer from psychological disorders. What is abnormal or, for that matter, what is normal? In this lesson, you will learn the differences between normal, abnormal, and disordered behaviour. You will also learn the current approach that is used in understanding disorders, as well as how disorders are classified and the effect that labelling has on people.

Defining Disorder

Have you ever experienced one or more of the following feelings?

- an unexplained worry or anxiety about the future
- fantasies of achievement and recognition
- suspicions that people don't like you, are laughing at you, or may even be making plans to hurt you
- mood swings from periods of elation and optimism to periods of depression in which you are pessimistic about attempting any task

Are the aforementioned feelings signs of abnormality? The answer is both yes and no. These feelings are natural and most of us experience one or more of them at times. However, they appear in exaggerated or combined form in people whose behaviour is labeled as abnormal.

What is seen as normal or abnormal can depend on many factors.

1. There is no such thing as abnormal human nature. Each society determines the range of behaviour it considers to be normal. All behaviour outside that range is labeled abnormal by that society. For example, one society might consider it normal for some people to see visions that others do not experience, while another society might consider that to be abnormal.

2. Customs and laws change over time. What is considered normal in one time period may be thought of as abnormal in another. For instance, the way we dress and the way we ornament our bodies (tattooing, piercing, or dyeing) change as trends change.

3. No behaviour can be considered without looking at the social context. For example, shouting hysterically at a basketball game and shouting hysterically during a church service are judged very differently even though they are the same behaviour.

4. There is a continuum between normal and abnormal behaviour. All of us react to stress and frustration with emotional discomfort and some disorganization of our usual behaviour patterns. Our "mental health" changes depend on the stresses that we are facing, our life experiences, and our coping strategies.

Whether behaviour is seen as normal or abnormal might depend on the situation or context, the cultural rules or norms, or the period in history in which the behaviour occurs. It may also depend on the standards that you set for yourself and others. You learn what is normal from the values that you learn from others. You determine what is or isn't normal based on what society thinks.

Psychologists today define a **psychological disorder** as an ongoing pattern of thoughts, feelings, and actions that are deviant, distressful, and dysfunctional.

- **Deviant behaviours** are those behaviours that are different from other people in your culture.
- **Distressful behaviours** cause suffering, grief, or even danger to an individual.
- **Dysfunctional behaviours** interfere with healthy functioning.

In order to be diagnosed as a psychological disorder, the following four criteria must be met. The behaviour must be

- **maladaptive** or destructive to oneself or others
- **unjustifiable** or without a rational basis (It doesn't make sense to the average person.)
- **disturbing** or troublesome to other people
- **atypical** or so different that it violates a norm (A norm is a rule for accepted and expected behaviour in a particular culture.)

Using the criteria of maladaptive, unjustifiable, disturbing, and atypical, you can determine whether or not someone's thoughts, feelings and actions are considered a psychological disorder.

Understanding Disorders

In Module 1, you learned that there are different perspectives or ways of thinking in psychology. You also learned that these perspectives have changed throughout history. Let's review the different perspectives from Module 1 and see how they help us understand psychological disorders.

Perspective 1: Biological Perspective

The biological perspective focuses on how internal physical, chemical, and biological processes affect behaviour. Human genes, hormones, and neurotransmitters in the brain affect human thinking and reactions.

This perspective assumes that physiological causes are at the root of psychological disorders. This would include chemical or hormonal imbalances or deficiencies, and brain injuries.

Perspective 2: Behavioural Perspective

The behavioural perspective focuses on how the environment shapes and controls behaviour. Human thought and behaviour are explained in terms of conditioning. Observable behaviours and what reaction organisms get in response to specific behaviours are examined.

This perspective assumes that learned responses are at the root of psychological disorders. It looks at the behaviour itself as the problem.

Perspective 3: Cognitive Perspective

The cognitive perspective focuses on how mental processing of information guides behaviour. In other words, how we interpret, process, and remember environmental events. The rules that we use to view the world are important to understanding why we think and behave the way we do.

This perspective assumes that people's thoughts and beliefs are at the root of psychological disorders.

Perspective 4: Socio-cultural Perspective

The socio-cultural perspective focuses on how thinking and behaviour change depending on the setting or situation. It examines how our thoughts and behaviours vary from people living in other cultures. There is an emphasis on the influence that culture has on how we think and act.

This perspective assumes that behaviour that is shaped by family, society, and culture is at the root of psychological disorders.

Perspective 5: Humanistic Perspective

The humanistic perspective focuses on how self-image and perceptions guide behaviour. There is a belief that we choose most of our behaviours and that these choices are guided by physiological, emotional, or spiritual needs.

This perspective assumes that because individuals are responsible for their own behaviour and their need to reach their full potential, this need is at the root of psychological disorders.

Perspective 6: Psychodynamic Perspective

The psychodynamic perspective focuses on how behaviour comes from hidden or unconscious parts of the mind. The unconscious mind (the part over which we have no control and which we cannot access) controls many of our thoughts and actions.

This perspective assumes that childhood conflicts over opposing wishes regarding sex and aggression are at the root of psychological disorders.

The above six perspectives have led to an approach that integrates or combines biological, psychological, and social factors to help us understand psychological disorders.

Biopsychosocial Approach

The biopsychosocial approach to understanding psychological disorders looks at both nature and nurture and focuses on the interaction of biological, psychological, and social factors.

- Biological factors include our genetic predisposition or our hereditary likelihood of having a psychological disorder, our brain structure, and our brain chemistry.
- Psychological factors include our thoughts or thinking patterns which can be influenced by stress, trauma, learned helplessness, perceptions, and memories.
- Social factors include the roles, expectations, and beliefs of society and of our cultures.

These three factors—biological, psychological, and social—interact to shape our behaviour.

Now that we know the definition of a psychological disorder and how using the biopsychosocial approach can help us understand disorders, it is time to investigate how disorders are classified.

Classifying Disorders and Labeling People

Clinical psychologists and psychiatrists classify psychological disorders according to their symptoms. The American Psychological Association has developed the most accepted and widely used classification system. Disorders are classified in the *Diagnostic and Statistical Manual of Mental Disorders* (the DSM). This manual has been revised many times and is now in its 4th version.

The current version of the DSM is called the DSM-IV-TR. It divides disorders into seventeen major categories. Disorders are classified according to symptoms. There are many reasons why this is done. It is done in order to

- describe the disorder
- predict the future course of the disorder
- treat the disorder appropriately
- look into possible causes of the disorder

By means of assessments, interviews, and observations, clinical psychologists and psychiatrists can make a diagnosis based on the questions that are presented in the DSM-IV-TR. There are five levels in the DSM. Each level is called an axis.

- Axis 1 looks at whether or not a clinical syndrome or what you would think of as a psychological disorder is present.
- Axis 2 looks at whether or not there is a personality disorder.
- Axis 3 looks at whether or not a general medical condition is also present.
- Axis 4 looks at whether environmental problems such as issues at school are present.
- Axis 5 looks at a global assessment of overall functioning.

Research has shown that classifying disorders using the DSM is about 80% reliable. This means that if 100 clinicians interviewed and assessed the same patients, then 80% of the time they would all agree on the same diagnosis.

Some of the arguments used by critics of the DSM are as follows:

- The diagnosis only looks at a person's symptoms: this predetermines that the person has an illness.
- The DSM doesn't account for the vast number of psychological disorders that are around today. (This is why the manual needs to be revised many times.)
- The diagnoses create labels that are often difficult to remove.

We tend to view people differently when they have been labeled. These labels are society's value judgments and we look for evidence that supports our views and opinions. If you hear that the new person in your class is "gifted", you act in a way that brings out the behaviour that is expected. We see what we expect to see.

The influence of labels was researched in a study by David Rosenhan. Rosenhan and seven others went to different psychiatric hospitals all claiming that they were hearing voices. This was the only symptom that they reported. All of the people were admitted to the hospital as suffering from schizophrenia. While they were hospitalized, they never reported any other unusual symptoms and they behaved as they normally did. Eventually, they were all discharged from the hospital with a diagnosis of schizophrenia in remission. While in the hospital, all of their behaviours were interpreted as a sign of their disorder.

In another study, people watched videotaped interviews. Some people were told that the people being interviewed were job applicants and others were told that the people being interviewed were psychiatric patients. What do you think happened? Once again, the power of labels influenced perceptions.

We have to remember that there are benefits to diagnostic labels. They help mental health professionals communicate and look at possible causes, and they help guide therapists to appropriate treatments.

Learning Activity 5.1: Psychological Behaviours

Consider the following scenarios. For each, indicate if it should be considered a psychological disorder. Use the criteria of maladaptive, unjustifiable, disturbing, and atypical to help with your decision. Use the chart provided after the scenarios to record your answers.

1. In December of 1999, John was convinced that massive computer malfunctions (caused by Y2K incompatibility) would mean the end of the world. He stockpiled supplies of canned food, bottled water, gasoline, and propane. He also bought a generator. He kept the gasoline and propane in tanks in his basement. While not particularly safe, this was the best place he could find to store them.

2. Mark is in Grade 11 and has finally accepted that he has a strong physical attraction to other males. He is afraid to tell his parents and friends because he fears they will be angry with him or lose respect for him. Mark is suffering from a great deal of anxiety because he has to hide his true feelings from the people whom he cares about the most. He is also concerned that his lifestyle choice will prevent him from fulfilling other dreams, such as raising a family and becoming a politician.

3. Nicholas joined the military after high school. He was assigned to serve in a war-torn country. Last week, his battalion was attacked and many soldiers were killed. Nicholas feels that killing is wrong, even in these circumstances, and risked his own life by refusing to fire his weapon. His choice cost some of his peers their lives.

4. Braden is passionate in his belief that animals should not be used in research. He has devoted his life to the cause. Last week, he bombed the administrative office of a pharmaceutical company that is known to perform animal research. Four people were injured in the explosion and one died.

5. Marie has smoked since she was 14 years old. She is now 32 and is unable to quit despite having tried several times. Her most recent attempt to quit occurred eight months ago when she became pregnant with her first child. That only lasted four weeks. Now, at eight months pregnant, she hides her cigarette smoking from her family and friends.

continued

Learning Activity 5.1: Psychological Behaviours (continued)

6. Joanna's father died suddenly two weeks ago. She was numb for about a week but now she is overwhelmed by sadness. She has not gone back to school yet because she can't get herself out of bed in the morning. She eats very little and feels scared that she will not be able to cope with future challenges.

7. Marisa claims that she was a warrior princess in a past life. She believes that she can "channel" this previous personality and she makes a living by allowing her "warrior princess" self to channel advice to paying customers.

8. Juanita wears a crystal that was given to her as a child. She believes that with the help of the crystal she can see the auras of other people. Two weeks ago, she lost her crystal. She has since become very anxious. Without the crystal, she claims that she can't concentrate on her work. She is in danger of losing her job.

9. Joachim is afraid of driving or riding in a motor vehicle. When he was 17, his brother was killed in a fatal car collision. He had been the driver of the car and had walked away with only a few minor injuries. Now, at age 27, he still refuses to get into any motor vehicle. Fortunately, he has always been able to function normally because he can easily walk to work. His family also lives within walking distance.

10. Joachim (from the previous scenario) is now 33 and married. His wife is pregnant and insists that Joachim get over his fear of cars. He has tried several times to get over his fear; however, he finds that he is overcome by paralyzing fear as soon as he sets foot into a taxi or car.

Use the chart on the following page to see which criteria are met in each of the scenarios. Place an X if the criteria are met.

- Maladaptive means destructive to oneself or others.
- Unjustifiable means that there is no rational basis.
- Disturbing means that it is troublesome to other people.
- Atypical means that it is so different that it violates societal or cultural rules.

continued

Learning Activity 5.1: Psychological Behaviours (continued)

Scenario	Maladaptive	Unjustifiable	Disturbing	Atypical
John				
Mark				
Nicholas				
Braden				
Marie				
Joanna				
Marisa				
Juanita				
Joachim at 27				
Joachim at 33				

Check the answer key.

Lesson Summary

In order to be defined as a psychological disorder, behaviour must be maladaptive, unjustifiable, disturbing, and atypical. The biopsychosocial approach to psychological disorders looks at the interaction of many different factors (biological, psychological, and social) in providing an understanding of disorders. Psychologists and other therapists group disorders into categories according to symptoms. The manual that outlines this information is referred to as the DSM-IV-TR. Diagnosing people labels people. While this does have its benefits for professionals to communicate effectively, these labels can and do influence our expectations of how people will behave.

Notes

LESSON 2: ANXIETY AND MOOD DISORDERS

Lesson Introduction

Everyone has anxiety. It keeps us busy doing things that keep us safe and out of harm's way. It involves a feeling of apprehension or nervousness. These feelings occur in most people before a big test, a school project presentation, the first day on a new job, a first date, or an important medical test. Anxiety sometimes becomes a problem. This occurs when it begins to control and dominate your life. In this lesson, you will learn about five different types of anxiety disorders and their possible causes.

Like anxiety, everyone feels depressed at times. Depression is a normal response to many of the things life hands us. Once again there is a line between a normal reaction and a mood disorder. This lesson will examine the two main mood disorders and look at possible causes.

The symptoms of psychological disorders are on a continuum from mild to serious. It's easy to see some of the symptoms of all the disorders in ourselves. We all tend to self diagnose: this is what is referred to as "psychology student disease".

Anxiety Disorders

Anxiety is a normal experience in our life in response to stressful events. It is not a disorder unless it begins to create significant difficulties in a person's life. This is when it takes control over your life. Remember the four criteria from the last lesson. In order to be diagnosed as a psychological disorder, the following four criteria must be met. The behaviour must be

- **maladaptive** or destructive to oneself or others
- **unjustifiable** or without a rational basis (The behaviour doesn't make sense to the average person.)
- **disturbing** or troublesome to other people
- **atypical** or so different that it violates a norm (A norm is a rule for accepted and expected behaviour in a particular culture.)

There are five major anxiety disorders.

- Generalized anxiety disorder

  This is marked by persistent, unexplained feelings of apprehension and tenseness.

- Panic disorder

  This is marked by sudden bouts of intense, unexplained panic.

- Phobia

  This is marked by disruptive, irrational fears of objects or situations.

- Obsessive-compulsive disorder

  This is marked by unwanted, repetitive thoughts and actions.

- Post-traumatic stress disorder

  This is marked by reliving a severely upsetting event in unwanted recurring memories and dreams.

Let's look at each of the anxiety disorders separately.

Generalized Anxiety Disorder

Generalized anxiety disorder (GAD) is diagnosed when a person feels constant, low-level anxiety. They typically feel nervous and out of sorts. Symptoms include feeling restless, feeling on edge, having difficulty concentrating, having your mind go blank, being irritable, having muscle tension, and having sleep disturbances.

Panic Disorder

Panic disorder is diagnosed when the person suffers from episodes of intense anxiety for no reason. The main symptom is the panic attack itself. During the attack the person may have a fear of losing control or dying, a pounding heartbeat, difficulty breathing, feelings of being smothered, chest pain, tingling numbness in the skin, feelings like they are choking or they have a lump in their throat, sweating, shaking, nausea, or feelings that familiar things feel odd.

Note that if you experience the aforementioned symptoms and that there is a reasonable cause, then it is not a panic attack.

Phobia

Phobias are irrational fears of situations, activities, or objects. They are classified as an anxiety disorder because coming into contact with the feared situation or object causes anxiety. We all have fears; however, people with phobias are consumed by their efforts to avoid the feared situation, activity, or object. The fear is disruptive and can be intense.

Some phobias are specific; for instance,

- claustrophobia (fear of enclosed spaces)
- acrophobia (fear of heights)
- spermophobia (fear of germs)
- hematophobia (fear of blood)
- sciophobia (fear of shadows)
- dendrophobia (fear of trees)

And the list goes on.

Some phobias produce fear in social situations. These are called **social phobias**. This can include fear of speaking in public, eating in front of others, or using public washrooms.

Agoraphobia is a fear of situations that the person views as difficult to escape from if panic sets in. People with this phobia have difficulty leaving their homes.

Obsessive-Compulsive Disorder

Obsessive-compulsive disorder (OCD) is diagnosed when persistent, unwanted thoughts cause someone to feel the need to engage in a particular action. The repetitive thoughts are called **obsessions** and the repetitive actions are called **compulsions**. Obsessions result in anxiety; this anxiety is reduced when the person performs the compulsive behaviour.

We all have, to some degree, obsessions and compulsions. In fact, these can be helpful at times. They help us develop important routines. They become a problem when they begin to take control over our lives.

One common obsession focuses on germs and develops into the compulsion of repetitive handwashing. Other common obsessions are being overly concerned with order and exactness, and being concerned that something terrible (like a fire or an illness) is about to happen. These obsessions result in compulsions such as repeating rituals over and over again, checking doors, and checking locks.

Post-traumatic Stress Disorder

Post-traumatic stress disorder (PTSD) is diagnosed when a person who has been involved in or observed an extremely troubling event, such as a war or a natural disaster, has flashbacks or nightmares. The memory of the event causes anxiety. Stress is the trigger and, in addition to nightmares and flashbacks, the person may have trouble relating to others.

Children who witness or experience a traumatic event are particularly susceptible to this disorder. They see the future with a sense of hopelessness and they experience difficulty trusting others.

Causes of Anxiety Disorders

Anxiety disorders are caused by both nature (the impact of our biology) and nurture (the influence of our environment).

Biological Factors

Some of the biological factors that contribute to the cause of anxiety disorders are heredity, brain function, and evolution.

- Heredity: Some of us inherit a predisposition or likelihood to develop an anxiety disorder. Evidence comes from studies on human identical twins and on fearful monkeys who have fearful children. It appears that the specific fear is not inherited; instead, the predisposition to be fearful is inherited.

- Brain function: Brain scans of those people with anxiety disorders show that they have a higher degree of activity in their frontal lobes when compared to people who do not have an anxiety disorder. There is also a difference in the amygdala (the emotion centre in the brain) in people diagnosed with phobias.

- Evolution: We have the same fears as our ancestors did even though the modern world has made many of these fears less of a threat. For example, we tend to fear snakes and not cars even though we are more likely to be in a car accident than we are to be bitten by a snake.

Learning Factors

Some of the learning factors that contribute to the cause of anxiety disorders are conditioning, observational learning, and reinforcement.

- Conditioning: Humans learn to associate fear with certain places or things. An example of this is Watson's Baby Albert study. Albert learned to fear white rats because they were paired with a frightening sound.

- Observational learning: Children learn to be afraid by watching or observing how others respond with fear to certain objects or situations.
- Reinforcement: We can also learn to associate emotions with actions. This depends on what happens after the action takes place. We repeat actions that have good results and avoid actions that have bad results.

Mood Disorders

Mood disorders are disturbances of emotion. Everyone feels depressed at times and really excited or manic at other times. Like with anxiety disorders, the four criteria of atypical, maladaptive, unjustifiable, and disturbing must be met for behaviour to be considered a disorder. There are two main mood disorders: major depressive disorder and bipolar disorder.

Major Depressive Disorder

Major depressive disorder is the most common of the psychological disorders. It is diagnosed, according to the DSM-IV-TR when five of the following nine symptoms have been present for two or more weeks. The symptoms are as follows:

- depressed mood most of the day, nearly every day
- little interest or pleasure in almost all activities
- significant changes in weight or appetite
- sleeping more or less than usual
- agitated or decreased level of activity
- fatigue or loss of energy
- feelings of worthlessness or inappropriate guilt
- diminished ability to think or concentrate
- recurrent thoughts of death or suicide

It is important to note that these symptoms must impair daily functioning in order to indicate that the person has a major depressive disorder.

A diagnosis of **dysthymic disorder** is possible if the aforementioned symptoms are less severe and of shorter duration.

Bipolar Disorder

Bipolar disorder was once called manic depressive disorder. A person diagnosed with this disorder alternates between the hopelessness of depression and an overexcited, hyper, and unrealistically optimistic state of mania.

During the depressive stage, the person experiences the same symptoms that were outlined under major depressive disorder. During the mania stage, the symptoms include:

- not sleeping for long periods of time
- experiencing thoughts that are continuously changing
- being easily distracted
- setting impossible goals
- feeling a heightened sense of confidence and power
- feeling anxious and irritable
- engaging in high risk behaviours that have negative consequences

Causes of Mood Disorders

Like anxiety disorders, nature and nurture interact to contribute to the cause of mood disorders. Stress seems to provide the trigger and a mood disorder may develop when other factors—biological and social-cognitive in nature—are present.

Biological Factors

Some of the biological factors that contribute to mood disorders are heredity and brain function.

- Heredity: Mood disorders run in families. Evidence, once again, comes from studies of identical and fraternal twins. It is clear that heredity has an influence.
- Brain function: PET scans show that the frontal lobes of depressed people are less active than the frontal lobes of others. Certain neurotransmitters appear to be out of balance in some people diagnosed with a mood disorder. (Neurotransmitters are the chemical messengers that allow neurons in the brain to communicate with each other.) The two neurotransmitters that are most important in relation to depression are serotonin and norepinephrine. It appears that these neurotransmitters are lacking during depression.

Social-Cognitive Factors

The way we think, the way we feel, and the situations that we find ourselves in also contribute to mood disorders. Some of these social-cognitive factors are learned helplessness and attributions.

- Learned helplessness: When people learn that nothing that they do can improve their situation, they get a feeling of helplessness and give up trying to make improvements.

- Attributions: When things go wrong, we tend to try to explain or justify them. We attribute these failures to ourselves. People suffering from depression tend to think that bad situations will last for long periods of time and that they will never get over it. They also tend to think that bad situations happen because of their actions, that it is their fault, that many different aspects of their life are affected, and that nothing they do is right.

What comes first, the negative thoughts or the depressed mood? It seems to be a vicious cycle.

Negative stressful events (for example, losing a job, being rejected, suffering physical trauma, and so forth) lead to a negative explanatory style that involves who and what they blame their failures on.

This creates a hopeless, depressed state. The person becomes withdrawn and self-focused.

This changes the way that the person thinks and acts, and how others respond to the person.

New losses and stresses start the cycle all over again.

Lesson Summary

Anxiety and mood disorders are two categories of psychological disorders in the DSM-IV-TR. Don't overreact if you have some of the symptoms that have been outlined in this lesson. For a symptom to be such that it might be a sign of a disorder, it must be maladaptive, unjustifiable, disturbing, and atypical.

Anxiety is a feeling of apprehension and nervousness. In this lesson, the symptoms of five types of anxiety disorders were presented. The five disorders were: generalized anxiety disorder, panic disorder, phobia, obsessive-compulsive disorder, and post-traumatic stress disorder. Biology and the environment (nature and nurture) interact to contribute to the possible development of anxiety disorders.

Mood disorders are disturbances of emotion. In this lesson, the symptoms of the two main mood disorders were presented. The two disorders were major depressive disorder and bipolar disorder. There is no single explanation for mood disorders. Instead, nature and nurture once again interact to contribute to the possible development of mood disorders.

Assignment 5.1: Psychological Disorder Analysis (18 marks)

Read the following scenarios. Based on the information presented in this lesson, determine a possible diagnosis for the individual. In a few sentences, provide your explanation for why the person may have developed the disorder.

Each scenario is worth 3 marks for a total of 18 marks.

1. Both of Margaret's parents died in a plane crash last year. Since then, Margaret has been afraid to leave her house. She has two children: one in school and one at home with her. She has missed all of her daughter's school functions this year and has most of their food delivered to her house. Her friends come by to pick up her youngest child (so that he can go to places like the zoo and the park) because Margaret won't go outside. When asked why she does this, she has no explanation. She just says, "Too many things could go wrong."

   Your diagnosis *(1 mark)* _____
   Explanation *(2 marks)*

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

Assignment 5.1: Psychological Disorder Analysis (continued)

2. Jacob is a self-proclaimed "neat freak". His cabinets and drawers are labeled so that anyone putting things away knows where they go. His spices are alphabetized, his canned goods are in order from smallest to largest, and his boxed goods are neatly stacked in rows. The clothes in his closet are arranged by type and colour. His office files and bins have typed labels. There is a specific spot for everything. Jacob spends half an hour before bed making sure everything is in its place.

   Your diagnosis *(1 mark)* _____

   Explanation *(2 marks)*

   _____

   _____

   _____

   _____

   _____

   _____

   _____

3. Edward has four credit cards—all of which are at their maximum limit. He has over $60,000 in debt and is only 20 years old. Buying things gives him a sense of satisfaction even though he knows that he doesn't have the money to pay for what he buys. His parents and his friends have talked to him about his uncontrolled spending but he still doesn't stop. He likes to buy expensive things for himself, as well as for his friends.

   Your diagnosis *(1 mark)* _____

   Explanation *(2 marks)*

   _____

   _____

   _____

   _____

   _____

   _____

   _____

continued

Assignment 5.1: Psychological Disorder Analysis (continued)

4. Katarina suffers from major mood swings. She goes from being too carefree and without worries (spending too much money and endangering her life) to being very sad, melancholy, and depressed (sleeping and not eating). Due to her erratic behaviour, she has been fired from several jobs and is now on unemployment.

   Your diagnosis *(1 mark)* _____

   Explanation *(2 marks)*

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

5. One day, when riding in an elevator, Megan comes to realize that she has a fear of small and crowded spaces. She begins having physical symptoms such as shortness of breath and chest pains.

   Your diagnosis *(1 mark)* _____

   Explanation *(2 marks)*

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

continued

Assignment 5.1: Psychological Disorder Analysis (continued)

6. James has an overwhelming desire to check the door to make sure it's locked. Sometimes he checks it fifty times throughout the night. When in the car, he locks the doors every few seconds.

Your diagnosis *(1 mark)* _____

Explanation *(2 marks)*

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

LESSON 3: DISSOCIATIVE, SOMATOFORM, SCHIZOPHRENIA, AND PERSONALITY DISORDERS

Lesson Introduction

The focus of this lesson will be on the psychological disorders in which there is a loss of

- some aspect of oneself (dissociative disorders)
- connection between the mind and body (somatoform disorders)
- contact with reality (schizophrenia disorders)
- productive behaviour patterns (personality disorders)

The symptoms for each of the categories of disorders will be presented and possible causes will be explained.

Dissociative Disorders

Dissociative disorders involve a disruption in conscious processes. The person has broken away from their feelings, thoughts, or memories. Three types of dissociative disorders are:

- dissociative amnesia: There is loss of memory of a traumatic event.
- dissociative fugue: There is a loss of identity and mental travel to a new location.
- dissociative identity disorder: There are two or more distinct personalities.

Dissociative Amnesia

In **dissociative amnesia**, there is a memory loss that can be caused by a traumatic event. Amnesia can be caused by a number of factors such as drinking too much alcohol and blacking out, head injury, fatigue, and Alzheimer's disease. If the memory loss is in response to a specific, stressful event then it is diagnosed as dissociative amnesia.

Dissociative Fugue

In **dissociative fugue**, there is a loss of identity and the person mentally travels to a new location. This state can last for a few hours or it can last for months or even years. This fugue state is an unconscious response to stress.

Dissociative Identity Disorder

Dissociative identity disorder was once called multiple personality disorder. An individual with this disorder is said to exhibit two or more distinct personalities. These personalities can differ in age and gender. Each personality has its own voice and mannerisms and is unaware of the existence of the other personalities. Case studies have shown that people with dissociative identity disorder commonly have a history of sexual abuse or some other childhood trauma.

Causes of Dissociative Disorders

Some theorists believe that dissociative disorders occur because traumatic events are repressed. This in turn causes a split in consciousness. It is a way of dealing with anxiety—a defense against unacceptable impulses.

The debate continues as to whether or not dissociative identity disorder even exists. Critics say that

- this disorder was never even seen in people until the 1980s
- the disorder is not commonly found outside of North America
- therapists have somehow constructed this disorder with their fantasy-prone, emotionally vulnerable patients (In other words, the patients role play the disorder based on their therapist's questions.)

Somatoform Disorders

Somatoform disorders occur when a person has a physical problem and there is no physical cause. The physical problems occur because of psychological reasons. Two of the most common disorders in this category are hypochondriasis and conversion disorder.

Hypochondriasis

People diagnosed with **hypochondriasis** experience physical illness even though there is nothing physically wrong with their bodies. The disorder is in their mind. They really believe that they are sick. Hypochondriacs may believe that minor problems such as headaches or shortness of breath indicate that they have a severe illness, even if they are assured by their medical doctors that nothing is physically wrong with them. Pretending to be sick or thinking that you are getting sick and then getting sick does qualify as hypochondriasis.

Conversion Disorder

People diagnosed with **conversion disorder** report the existence of a severe physical problem such as paralysis, laryngitis, or blindness. They truly are unable to move their arms or legs, speak, or see. Once again, there is no biological reason for their problem.

Causes of Somatoform Disorders

Some believe that somatoform disorders may be caused by unresolved unconscious conflicts. Others believe that people with somatoform disorders get reinforced for their behaviour. In other words, they get attention, which in turn reduces their anxiety, and they gain sympathy and support.

Schizophrenia

The most frightening and most misunderstood of all of the psychological disorders is schizophrenia. **Schizophrenia** is not one single disorder: it is a group of severe disorders in which the person has

- disorganized and delusional thinking
- disturbed perceptions
- inappropriate emotions and actions

Schizophrenia is not the same as dissociative identity disorder (multiple personality disorder). Schizophrenia involves a split from reality. It tends to become apparent in people as they enter young adulthood.

Symptoms of Schizophrenia

Common symptoms of schizophrenia include delusions, hallucinations, and inappropriate emotions or behaviours.

Delusions are beliefs that have no basis in reality; they are false. We all have false beliefs; however, delusions are exaggerated and last for long periods of time. There are different categories of delusions. These include:

- **delusions of grandeur:** These are false beliefs that you are more important than you really are. It may include you thinking that you are someone famous.
- **delusions of persecution:** These are false beliefs that people are out to get you.
- **delusions of sin or guilt:** These are false beliefs that you are responsible for the bad things that happen in the world because of your behaviour.
- **delusions of influence:** These are false beliefs that other things control you.

Hallucinations are false perceptions. They occur in the absence of any sensory stimulation. Most hallucinations are auditory in nature, where people report hearing voices. However, hallucinations can also be visual, where people report seeing objects that don't exist, or tactile, where people report feeling a burning or tingling sensation that doesn't exist. They may also distort smell and taste.

Inappropriate Emotions or Behaviours

People diagnosed with schizophrenia may also display inappropriate emotions or behaviours. Consequently, in happy situations they might cry uncontrollably and in sad situations they might not show any emotion.

The same holds true for behaviour. These people may display verbally or physically inappropriate behaviour. Some people produce a *word salad* that is made up of nonsense syllables. Others enter a state called *waxy flexibility*. When a person is in this state, you can, for example, put that person's arm into a certain position and it will stay there for hours on end. Quite often, schizophrenics will withdraw from the real world.

Symptoms of schizophrenia can be classified as either positive symptoms or negative symptoms. This does not mean good symptoms or bad symptoms.

■ Positive symptoms refer to an excess in behaviour, thought, or mood.

■ Negative symptoms refer to a deficit or reduction in normal functioning.

The chart below indicates the differences between positive and negative symptoms.

Positive symptoms	Negative symptoms
Delusions	Little emotion displayed
Hallucinations	Inability to feel pleasure
Disorganized thoughts	Lack of motivation
Disorganized speech	Lack of meaningful speech
Disorganized behaviour	Personal hygiene stops
Extremely high activity level	
Extremely low activity level	
Odd movements and gestures	

Types of Schizophrenia

There are four types of schizophrenia: disorganized schizophrenia, paranoid schizophrenia, catatonic schizophrenia, and undifferentiated schizophrenia. The chart below details the symptoms that characterize each one.

Disorganized Schizophrenia	Paranoid schizophrenia	Catatonic Schizophrenia	Undifferentiated Schizophrenia
Inappropriate behaviour and emotion	Delusions of persecution	Odd movements	Disordered thinking
Odd movements	Delusions of grandeur	Remain motionless	Mixture of symptoms from the other three types
Incoherent language	Auditory hallucinations	Waxy flexibility	
Word salad		Excitable motor behaviour	
Make up own words		Flat or no emotion	
Make rhyming phrases			

Schizophrenia is such a complex psychological disorder that the possible causes of schizophrenia are complex as well. Once again, both biological factors (for instance, genetics, brain structure, brain function, and prenatal viruses) and psychological factors (for instance, environment, stress, and family relationships) appear to interact to produce this disorder.

Causes of Schizophrenia

A biopsychological perspective is used to explain the possible causes of schizophrenia. Many factors interact to produce this disorder.

Biological Factors

■ **Genetics:** Genetics produce a predisposition or an increased likelihood that the disorder will develop. Evidence comes from twin studies and studies on families where a parent or sibling has schizophrenia. Some research has shown that there is an abnormality on the fifth chromosome.

- **Brain structure:** Brain scans with MRIs show that the brain structure of people diagnosed with schizophrenia is different than other people. The scans show that there is a smaller amount of brain tissue and larger fluid filled spaces around that tissue. As well, the thalamus, which acts as the relay station for routing incoming sensory information, is smaller in size. It also appears that the two halves of the brain are not symmetrical in schizophrenics.

- **Brain function:** PET scans show that there is less activity in the frontal lobes of schizophrenics. As well, there appears to be an increase in the number of receptor sites for the neurotransmitter dopamine. The high level of dopamine is called the dopamine hypothesis. This might explain the delusions and hallucinations that are associated with schizophrenia.

- **Prenatal viruses:** Research has shown that a viral infection during the middle of pregnancy may cause this disorder.

Some research suggests that the positive symptoms are associated with abnormalities in dopamine levels and that the negative symptoms are associated with genetic factors.

Psychological Factors

Not all psychologists believe that biology alone produces schizophrenia. Some believe that certain environments may cause or increase the likelihood of developing the disorder. One such cause is called the **double blind**. Note that this is not the double blind procedure that was discussed in Module 1. In this case, the double blind is when a person receives contradictory messages when growing up. The theory is that these conflicting messages may develop into distorted ways of thinking.

Many years ago, Freud believed that cold, domineering, and selfish mothers produced schizophrenic children. There is no research to support this idea.

Research does support the idea that genetics are a major contributor (predisposition) to the development of schizophrenia. This predisposition seems to go from a mere possibility of developing the disorder to a reality if certain triggers are present. These triggers are stress and disturbed patterns of family communications.

Personality Disorders

Personality disorders are lasting, rigid patterns of behaviour that seriously impair social functioning. There are ten different personality disorders according to the DSM-IV-TR. They are divided into three clusters. There is a lot of overlap between the different disorders. The three clusters are: personality disorders related to anxiety, personality disorders with odd or eccentric behaviours, and personality disorders with dramatic or impulsive behaviours.

Personality Disorders related to Anxiety

Avoidant personality disorder and dependent personality disorder are two disorders within this cluster. Individuals with **avoidant personality disorder** are very sensitive about being rejected so personal relationships are very difficult for them. Individuals with **dependent personality disorder** behave in clingy ways and have a great need for others to take care of them.

Personality Disorders with Odd or Eccentric Behaviours

Paranoid personality disorder and schizoid personality disorder are two disorders in this cluster. Individuals with **paranoid personality disorder** have a deep distrust of others. This gets in the way of developing relationships. Individuals with **schizoid personality disorder** live all alone, like hermits. They have no social connections and avoid all intimate interactions.

Personality Disorders with Dramatic or Impulsive Behaviours

Borderline personality disorder and anti-social personality disorder are two disorders within this cluster. Individuals with **borderline personality disorder** exhibit instability of emotions, self-image, behaviour, and relationships. Individuals with **anti-social personality disorder** show absolutely no concern for the rights or feelings of other people. They are willing to take part in criminal behaviour and feel no remorse. This disorder is also known as psychopathic or sociopathic personality disorder.

Causes of Personality Disorders

The biological perspective suggests that genetics may play a role. There might be a predisposition to low levels of autonomic system arousal. This can result in a lack of fearlessness which, if combined with a lack of social responsibility, can lead to an anti-social personality disorder.

Learning Activity 5.2: Psychological Disorders

Read each of the following scenarios and identify the possible psychological disorder. Some of the disorders were presented in Lessons 2 and 3.

1. After weeks of feeling dejected, having no energy, and being dissatisfied with his life, Fred has suddenly become ecstatic and energetic. He talks constantly about his far-fetched plans for making huge amounts of money. _____

2. Alayna worries about everything and can never relax. She is very jumpy, has trouble sleeping at night, and has a poor appetite. For the last few months, she has been unable to concentrate at work and is in danger of losing her job. _____

3. Bianca, a nineteen-year-old college student, has missed almost all of her classes this past month. She sleeps fourteen hours a day, has withdrawn from friends and family, feels worthless, and cries for no apparent reason. _____

4. Carl can't bear to be in small enclosed spaces, such as elevators, and goes to great lengths to avoid them. Recently, he turned down a high-paying job with an air conditioning repair company because it involved working in crawl spaces. _____

5. Kary believes that others are talking about her and actively plotting against her. She hears voices that tell her to carry a knife in her purse to protect herself. _____

6. Ever since going through a very painful divorce, Kayla has experienced a number of terrifying "spells" that seem to come out of nowhere. Her heart suddenly starts to pound, she begins to sweat and tremble, and she has trouble breathing.

   _____

7. For as long as she can remember, Marla has felt negative about life. Although good things occasionally happen in Marla's life, they have little impact on her gloomy mood. She functions adequately but she has few friends because she is so pessimistic.

   _____

continued

Learning Activity 5.2: Psychological Disorders (continued)

8. Nancy speaks slowly and in the same tone. She has reduced emotional responsiveness and few expressive gestures. Her speech is limited to brief empty comments. _____

9. Harry disinfects his shoes, clothing, floor, and doorknobs with bleach several times a day. Nevertheless, he is tormented by worries that his apartment may be contaminated by germs from the outside. He doesn't allow anyone to come into his apartment for fear they will contaminate his furniture and belongings. _____

10. Tyler said to his psychiatrist, "Today is infinity's horseman." He acted surprised that his therapist did not understand what he meant. When a friend told him that he was sad because of a death in the family, Tyler responded by laughing hysterically. _____

11. Jay, a high school teacher in Calgary, disappeared three days after his wife unexpectedly left him for another man. Six months later, he was discovered tending bar in Brandon. Calling himself Martin, he claimed to have no recollection of his past life and insisted that he had never been married. _____

12. Marian and her brother were recently involved in an automobile accident. Marian was not seriously injured but her brother was killed. Marian is unable to recall any details from the time of the accident until four days later. _____

13. Norma has frequent memory gaps and cannot account for her whereabouts during certain periods of time. After she expressed suicidal thoughts, her husband brought her to the hospital. While being interviewed by a clinical psychologist, she began speaking in a childlike voice. She claimed that her name was Donna and that she was only six years old. Moments later, she seemed to revert to her adult voice and had no recollection of speaking in a childlike voice or claiming that her name was Donna. _____

14. Sadie was brought into the hospital emergency room by her family who reported that she experienced a sudden onset of blindness. The family explained that Sadie had just discovered that her husband had been having an affair. She was arguing with her husband when she suddenly announced that she couldn't see. _____

15. Thuan, a Vietnamese refugee, can't stop thinking about the horrors he experienced while fleeing his country by boat. He sleeps poorly and is often awakened by terrifying nightmares.
_____

continued

Learning Activity 5.2: Psychological Disorders (continued)

16. Walt has been chronically worried about his health for years. During his last doctor's appointment, his blood pressure was slightly elevated. The doctor suggested that he make an appointment to check it again in a month; nonetheless, he indicated that he did not need medication. Despite the reassurance, Walt became convinced that he had hypertension and began to complain of vague chest pain.

_____

Check the answer key.

Lesson Summary

The symptoms and possible causes of dissociative disorders, somatoform disorders, schizophrenia disorders, and personality disorders were presented in this lesson.

■ In the presence of dissociative disorders, the person experiences a loss of some aspect of themselves.

■ In the presence of somatoform disorders, the person experiences a loss of connection between the mind and body.

■ In the presence of schizophrenia disorders, the person experiences a loss of contact with reality.

■ In the presence of personality disorders, the person experiences a loss of productive behaviour patterns.

LESSON 4: TREATMENT OF PSYCHOLOGICAL DISORDERS

Lesson Introduction

As you saw in the last two lessons, there are many different types of psychological disorders. There are also many different types of treatments or therapies. Therapists can choose from a wide variety of techniques to find the one that is best suited for their client. The therapist who uses techniques from two or more forms of therapy is using an **eclectic approach**.

The focus of this lesson will be on different types of therapies:

- psychological therapies (including the psychoanalytic approach, the humanistic approach, the behavioural approach, and the cognitive approach to treatment)
- biomedical therapies (including drug therapies, electroconvulsive therapy, and psychosurgery)

The methods of therapy all share a common purpose. They all seek to alter the client's behaviour, thoughts, and feelings. The following is an overview of the types of therapists that can provide treatment.

Types of Therapists

There are many types of therapists that have various kinds of training. For example, there are psychiatrists, clinical psychologists, counseling psychologists, counselors, clinical or psychiatric social workers, and psychoanalysts.

- Psychiatrists are medical doctors who can prescribe medication.
- Clinical psychologists have a doctorate (Ph.D.) and expertise in research, assessment, and therapy.
- Counseling psychologists have a graduate degree in psychology and usually deal with less severe cases than clinical psychologists.
- Counselors specialize in problems that are related to family and family relations.
- Clinical or psychiatric social workers have a Master of Social Work degree and offer psychotherapy to people with everyday personal and family problems.
- Psychoanalysts are trained in Freudian methods and they may or may not hold medical degrees.

Psychological Therapies

Psychological therapies or **psychotherapy** are planned, confidential interactions between a trained professional and a patient who suffers from psychological difficulties. There are four different approaches to therapy:

- the psychoanalytic approach
- the humanistic approach
- the behavioural approach
- the cognitive approach

Psychoanalytic Approach

According to the **psychoanalytic approach** to therapy, disorders are the result of our unconscious motives and conflicts. This approach was first practiced by Freud who called it **psychoanalysis**. Let's review Freud's thoughts on personality development.

Freud compared personality to an iceberg that is composed of three parts: the pleasure seeking id, the reality based ego, and the superego (which is the set of internalized beliefs or the conscience). He believed that, like an iceberg, most of our personality is hidden. What separates what is hidden and what is revealed to others is the boundary (the water line) between the unconscious mind and the conscious mind. We are conscious of the part of our personality above the water line (the ego) but not of the part of our personality below the water line (the id and the superego).

Freud also believed that our personality develops in childhood. Our personality develops in stages (the oral stage, the anal stage, the phallic stage, and the genital stage). There are conflicts at each stage. Freud believed that if these conflicts were unresolved, then this could result in problems in later life.

There are four methods of therapy that focus on the assumptions of the psychoanalytic approach:

1. free association
2. hypnosis
3. dream analysis
4. interpersonal psychotherapy

1. In **free association**, the patient is asked to say whatever comes to mind without thinking about it. In doing this, it is believed that the patient is more likely to reveal clues about whatever is bothering them without being censored. The therapist interprets what the patient says.

   The therapist starts by asking the patient to relax. The therapist might then ask the patient to talk about any memory from childhood, no matter what it is. If the patient hesitates, changes the subject, or leaves out information, then the therapist looks at this as possible signs of **resistance**. Resistance is where information is blocked from consciousness.

2. In **hypnosis**, patients are more likely to reveal their hidden thoughts and motives. Once again, the therapist must interpret what the patient is saying.

3. In **dream analysis**, patients are asked to describe their dreams. Because the ego's defenses are relaxed during sleep, the therapist can investigate the root of the patient's problem. The **latent content** (the hidden meaning of the dream) is of interest to the therapist who will then interpret what the patient says. This interpretation includes the meaning behind the dream, resistance, and any other behaviour that may be significant.

   Freud believed that some patients develop strong emotions, both positive and negative, toward their therapists. He called this **transference**. He believed that patients could gain insight into their current and past relationships by looking at their feelings toward their therapist.

4. In **interpersonal psychotherapy**, therapists focus on what is currently going on in the patient's life, not their childhood experiences. Current problems, situations, and relationships are explored.

All of the above therapies are called **insight therapies** because they force the patient to gain an understanding of their problems.

Humanistic Approach

According to the humanistic approach to therapy, the focus is on helping clients understand and accept themselves and become self-actualized. This approach is different from the psychoanalytic approach because it focuses on

- the growth of an individual
- the present and the future, not the past
- the conscious thoughts, not the unconscious thoughts

Humanistic therapists believe that people are innately good and possess **free will**. This is the belief that they are capable of controlling their own destiny. The opposite of free will is called **determinism**. This is the belief that people have no influence or control over their lives.

In the context of the humanistic approach, the person receiving therapy is referred to as a client rather than a patient.

The best known humanistic therapist is Carl Rogers. He created **client-centered therapy** or **person-centered therapy**. In this approach, the therapist listens to the client without interpreting what the client is saying and without directing the client toward any particular solutions.

Client-centered therapy stresses empathy, acceptance, and genuineness. The therapist is accepting, non-judgmental, and understanding. The goal is for the client to understand him- or herself better. In order to achieve this goal, the therapist provides the client with **unconditional positive regard**. This is the feeling of being totally accepted and valued.

In order for clients to have this supportive environment, the therapist actively listens to what the client is saying. The therapist

- paraphrases or restates what the client is saying using the words of the client
- clarifies what the client says by asking questions
- reflects the feelings of the client by being their mirror

You can become a more active listener in your own relationships by following Rogers' suggestions.

So far in this lesson, we have looked at the psychoanalytic approach that focused on unresolved childhood conflicts and the humanistic approach that focused on clients getting in touch with their own feelings. An approach to therapy that rejects the above ideas and instead applies the learning principles of classical and operant conditioning to eliminating unwanted behaviours is called the behavioural approach.

Behavioural Approach

Behaviourists believe that all behaviour is learned. They base their therapy on the principles of classical conditioning and operant conditioning.

Classical Conditioning Techniques

In classical conditioning, learning involves an association between two things that occur together. We learn to associate emotions with behaviours. Behaviourists believe that, since we can learn through association, we can also unlearn the same way. This is called **counterconditioning**. It is a technique that teaches clients to associate new responses to places or things that may have previously triggered unwanted behaviours.

The following are two counterconditioning techniques:

1. systematic desensitization
2. aversive conditioning

1. In **systematic desensitization**, the client learns to associate a pleasant, relaxed state with gradually increasing anxiety-stimulating stimuli. This technique is commonly used to treat phobias. The therapist begins by asking the client to write down a list of anxiety-producing situations in order, from low anxiety to high anxiety. The client then learns **progressive relaxation**. With this technique, the client is taught to relax different muscle groups, one at a time, until he or she reaches a state of complete relaxation. While in this state, the client is asked to close his or her eyes and imagine the lowest anxiety-producing situation. This is the one that was on the bottom of the hierarchy. Once the client doesn't feel any anxiety when imagining that situation, the client can move on to the next anxiety-producing situation. This is repeated until the top of the hierarchy is reached. After several sessions, the client might then look at pictures of the things that produce anxiety. Finally, the client experiences the situations that have caused anxiety in the past.

   Virtual reality technology has produced vivid experiences to assist clients in overcoming fears and phobias. In **virtual reality exposure therapy**, the client wears a headset projecting a three-dimensional virtual world into the visual field.

   Systematic desensitization, combined with modeling, helps clients overcome disruptive fears. Gradually, the client learns to model the behaviour.

2. **Aversive conditioning** is another type of counterconditioning that associates an unpleasant state with an unwanted behaviour. This process is the opposite of systematic desensitization. With aversive conditioning, a positive response to a harmful situation is replaced with a negative or aversive response. This technique has been used to treat nail biting, sexual deviancy in child molesters, bedwetting, and alcoholism.

   For example, in treating alcoholism, the alcoholic agrees to have a substance put in his or her drink that will trigger nausea and cause vomiting. The person then associates the vomiting with drinking and, in theory, becomes less inclined to drink substances that contain alcohol. In other words, the substance produces nausea, then the alcohol and the substance produce nausea, and, finally, the alcohol alone produces nausea

Besides classical conditioning techniques, operant conditioning techniques are used in the behavioural approach to therapy.

Operant Conditioning Technique

Therapy in which operant conditioning techniques are used is based on the premise that our behaviour is influenced by consequences—rewards and punishments. Desired behaviours should be rewarded and undesired behaviours should be punished or rewards should be taken away.

One specific operant conditioning technique is called **token economy**. It is a form of behaviour modification where rewards, in the form of tokens, are given for desired behaviour. These tokens are then exchanged for various privileges or treats. For example, five tokens can be exchanged for an hour of television or some candy.

Cognitive Approach

According to the cognitive approach to therapy, psychological problems stem from the way that people think. Therapists focus on changing unhealthy thought patterns.

Three such therapies are:

1. Cognitive Therapy
2. Cognitive Behaviour Therapy (CBT)
3. Rational Emotive Behaviour Therapy (REBT)

1. **Cognitive therapy** teaches people to think in positive ways that eliminate harmful, negative thoughts. This type of therapy assumes that our thinking affects our feelings.

2. **Cognitive behaviour therapy (CBT)** combines how a person thinks with how a person acts. It makes the person aware of irrational negative thinking and helps that person replace it with new ways of thinking and behaving.

3. **Rational emotive behaviour therapy (REBT)** attempts to change a person's belief system into something that is more realistic, rational, and logical. It assumes that negative situations or events lead to irrational beliefs. These beliefs then lead to emotional consequences.

   For example, the following analysis is known as the A-B-C analysis of rational therapy:

   A: The **activating experience** is that an action occurs (for example, your boyfriend or girlfriend breaks up with you).

   B: The **belief** occurs that this is the worst thing that has ever happened to you (in this example, you will never find another boyfriend or girlfriend).

   C: The **consequence** occurs and you become very depressed.

In REBT, the therapist works with the client to change the belief to something positive and realistic. This in turn produces a different consequence. For example, the new belief would be that there are other people that the client can date and the new consequence is that the client starts to date other people.

Therapy Delivery

Many of the therapies discussed in this lesson can occur either individually, with a therapist, or with a small group of people that share the same concerns or issues. There are advantages to group therapy.

- More people can be helped at the same time.
- There is a sense of community or connectedness with others who have similar problems.
- People don't feel like they are the only one with a particular problem.
- Group therapy costs less.

Sometimes, an entire family receives therapy. This special kind of group therapy is called **family therapy**. In family therapy, an individual's unwanted behaviours are seen as being influenced by other members of the family or directed toward other members of the family. The therapist guides the family toward developing more positive relationships and having better communication among its members. The family learns new ways of resolving conflict and preventing it from occurring.

Community mental health programs also provide therapy through crisis hotlines.

In addition to psychotherapy, biomedical therapies are also used to treat psychological disorders.

Biomedical Therapies

Biomedical therapies are the treatment of psychological disorders by changing the function of the brain. This is done through the use of drugs, electroconvulsive therapy, or surgery.

Drug Therapies

There are three main types of drug treatments:

1. antipsychotic medications (for treating schizophrenia)
2. antianxiety medications (for responding to stress)
3. antidepressant medications (for mood disorders)

1. **Antipsychotic Medications:** These medications block the activity of the neurotransmitter dopamine. Remember that there is a high level of dopamine in patients diagnosed with schizophrenia. Three examples of such drugs are Thorazine, Cozaril, and Risperdal. This type of drug helps people with schizophrenia reduce the levels of delusions and hallucinations, which helps them focus on significant, real aspects of their environment. It helps them feel connected to the world.

2. **Antianxiety Drugs:** These medications increase the levels of the neurotransmitter GABA. It is this neurotransmitter that helps our brain reduce the anxiety that is associated with stressful situations. Three examples of such drugs are Valium, Librium, and Xanax. These medications are most often used in combination with other psychotherapies.

3. **Antidepressant Drugs:** These medications affect the level of the neurotransmitter serotonin. Low levels of serotonin are associated with depression. The drugs are classified as selective serotonin reuptake inhibitors. This means that they block the reuptake or reabsorption of serotonin after it has been released into the synapse. This lets the serotonin remain active by staying in the synapse longer. Three examples of such drugs are Prozac, Zoloft, and Paxil.

All of the drug therapies have both positive and negative side effects. New drugs, with fewer negative side effects, are continuously being developed.

In addition to drug therapy, two other types of biomedical treatment are electroconvulsive therapy and psychosurgery.

Electroconvulsive Therapy (ECT)

Electroconvulsive therapy or ECT involves passing an electric current through a patient's brain until a convulsion is produced. The patient is under anesthetic when this occurs. This type of therapy is used to treat major depression when other types of treatments do not work. Like the other biomedical treatments, there are positive and negative side effects to this type of therapy. The most serious side effect is loss of memory for the time when the treatment was administered. It is still not fully known why ECT works.

Psychosurgery

One type of psychosurgery is the procedure called a **lobotomy**. It was used to calm patients that were violent and emotionally out of control. In the surgery, the nerves that connect the frontal lobes of the brain to the emotion centres of the brain are severed or cut. Historically, this procedure was used before medications were developed to help control the behaviour of patients. The negative side effect of this type of surgery was immense. Patients became unmotivated and stared off into space. Fortunately, this type of therapy is no longer used.

As you can see from this lesson, there are many different types of treatments or therapies. Many therapists today take an **eclectic approach** to treatment. This means that they use a variety of methods to treat a given person.

Lesson Summary

There are many different types of treatments or therapies. Therapists can choose from a wide variety of techniques to find the one that is best suited for their client. The therapist who uses techniques from two or more forms of therapy is using an eclectic approach.

The lesson focused on different types of therapies: psychological therapies and biomedical therapies.

■ The psychological therapies included the psychoanalytic approach, the humanistic approach, the behavioural approach, and the cognitive approach to treatment.

■ The biomedical therapies included drug therapies, electroconvulsive therapy, and psychosurgery.

The goal of all of the methods is to alter a person's behaviour, thoughts, and feelings. Different therapists with different types of training can provide the necessary treatment.

Notes

Assignment 5.2: Psychological Disorders Case Study (10 marks)

You are to take on the role of a psychotherapist. You will create a case study of a person who has been diagnosed with one of the disorders that was presented in this module. This is not a real case (you are to make one up). In your case study, you must include the following information:

- background information on the person
- signs and symptoms exhibited by the person
- diagnosis based on the symptoms
- possible explanation of why the person may have developed the disorder
- description of the type of treatment that will be used (If you wish, an eclectic approach can be used.)

You will receive up to 2 marks for each of the points. Your case study should include a paragraph for each of the items in the list.

Notes

Writing Your Final Examination
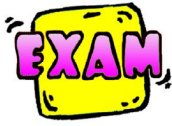
You will write the final examination when you have completed Module 5 of this course. The final examination is based on Modules 4 and 5, and is worth 20 percent of your final mark in the course. To do well on the final examination, you should review all the work you complete in Modules 4 and 5, including all the learning activities and assignments. You will write the final examination under supervision.

Notes

Lesson 5: Social Cognition and Social Influence

Lesson Introduction

All of the lessons so far in this course have focused on humans as individuals. We have looked at our individual brain processes, our sensations and perceptions, our motivations and emotions, and so on. We must remember though that we are not alone. We are social beings. We influence others and we are influenced by others.

In this lesson, you will learn how

- people think about other people and themselves by forming beliefs and attitudes
- attitudes affect behaviour
- behaviour affects attitudes
- attitudes can be changed

We will also examine different ways that the behaviour of others can shape or change our own behaviour. The lesson will end with a look at the effect that being part of a group has on our behaviour.

The field of psychology that studies why people act differently in the same situation and why the same person might act differently in different situations is called social psychology.

What is Social Psychology?

Social psychology is the study of the way people relate to others. It focuses on the development and expression of attitudes, people's attributions about their own behaviour and that of others, the reasons why people engage in both anti-social and pro-social behaviour and how the presence and actions of others influence the way people behave.

As you go through your daily life, you are like a scientist constantly gathering information and making predictions about what will happen next so that you can act appropriately. In light of this, how do we form our beliefs and attitudes about the world around us?

The answer is social cognition. This is how people think about other people and themselves.

Social Cognition

Social cognition, or social thinking, influences attitude formation and attribution theory. Let's begin with how attitudes are formed and how they can be changed.

Attitude Formation and Change

A major focus of social psychology is attitude formation and change. An attitude is a set of beliefs and feelings. We have attitudes about a lot of different things: the clothes we wear, the places we go, the people we meet, and the situations in which we find ourselves. Our feelings toward all of these things are either positive or negative. Our attitudes predispose us to respond in a particular way to objects, people, and events. There is a relationship between attitudes and behaviour.

Attitudes affect behaviour and behaviour affects attitudes. Let's first look at how attitudes can affect our behaviour. This involves what we say we will do and what we actually do.

Have you ever heard the phrase "talk the talk and walk the walk"? We do this when our attitudes predict the behaviour or actions that we will take. This happens when

- we are aware of our attitude about something
- our attitude is related to the behaviour
- we are not highly influenced by others

For example, let's say our attitude about eating fast food is that it is not a healthy choice. A behaviour of not eating fast food would occur if:

- we fully understand how bad fast food is nutritionally
- we choose better food options
- our friends don't influence our choices regarding what we eat

Sometimes, our behaviour affects our attitudes. If we can change the behaviour, then the attitude will also change. Three principles illustrate how this occurs:

1. Cognitive Dissonance
2. Role Playing
3. Foot-in-the-Door Phenomenon/Door-in-the-Face Phenomenon

1. **Cognitive dissonance theory** is based on the idea that people want their attitudes and behaviours to be consistent.

   For example, the attitude that eating fast food is never a healthy choice and the behaviour of never eating fast food is consistent.

   But sometimes, our attitudes and our behaviours are not consistent: they clash. This dissonance (or discomfort) occurs when our attitudes and our behaviours are inconsistent. We reduce the dissonance by changing our attitudes.

   For example, if our attitude was that fast food is never a healthy choice and once a week we ate at a fast food restaurant, then we would change our attitude to be that eating fast food more than once a week is an unhealthy choice. We reduce the dissonance by changing the attitude.

2. **Role Playing** occurs when you act the part of a new role that you have taken on. Eventually, the new role becomes you.

   For example, you have decided to take this independent study course. It is the first time that you have ever taken a course this way. You must study the course material independently. No teacher is monitoring your attendance, telling you when you can and can't use the washroom, or checking to see if you have read every word of every lesson. At first, it may feel a little strange; however, in time, it will not feel so strange—you become an independent learner. What you do, you become.

   This principle was illustrated in a study by Philip Zimbardo called the "prison study". Zimbardo randomly assigned a group of Stanford University students to the role of either a guard or a prisoner in a pretend or simulated prison. The guards and the prisoners adopted their new roles and became the characters that they were playing. Zimbardo had to call off the study after only six days because the students playing guards were displaying humiliating aggressive behaviours and cruelty toward the students playing prisoners. The roles affected the behaviour which subsequently affected attitudes.

3. **Foot-in-the-Door Phenomenon** is the tendency for people to agree to small requests before they will agree to larger requests. Let's say that you need to borrow $20 from your friend. According to this principle you should ask for a smaller amount first (for example, $5), then ask for a larger amount.

   This principle is related to the **Door-in the-Face Phenomenon** which is the tendency for people to agree to smaller requests after they have refused a larger request. Let's go back to our example. After your friend refuses to loan you $20, she might agree to loan you $5.

In all of the above principles—cognitive dissonance, role playing, foot-in-the-door, and door-in-the-face—behaviour affected attitude.

Learning Activity 5.3: Cognitive Dissonance

The following situations are examples of behaviours and attitudes that are not consistent with each other. In other words, they are examples of cognitive dissonance. For each one, identify the attitude and the behaviour and describe how to lessen the inconsistency between the two.

1. Teenagers drive over the speed limit even though they know that doing this is dangerous.

   Attitude: _____

   _____

   Behaviour: _____

   _____

   Reduce the cognitive dissonance by _____

   _____

   _____

   _____

   _____

2. You hate chemistry class and your teacher has asked you to encourage some younger students to sign up for the class next year. You speak to the younger students.

   Attitude: _____

   _____

   Behaviour: _____

   _____

   Reduce the cognitive dissonance by _____

   _____

   _____

   _____

   _____

3. You buy a used television even though it wasn't quite what you wanted. Two weeks later, you find a new television for the same price that has everything you wanted. You can't return the used television to the person you bought it from.

Attitude: _____

_____

Behaviour: _____

_____

Reduce the cognitive dissonance by _____

_____

_____

_____

_____

Check the answer key.

Social cognition influences attitudes (beliefs and feelings) and attributions (the reasons why a person behaves as they do) that help us explain a person's behaviour.

Attribution Theory

We all have a tendency to analyze others by observing their behaviour. We typically explain behaviour in one of two ways. We attribute the behaviour to the person or we attribute the behaviour to the situation. For example, your friend has just dropped out of school. You can explain this behaviour by blaming the event on the person or you can blame it on the situation. If you blame the person, you will probably feel it is your friend's fault that he dropped out of school. If you blame the situation, then you will probably feel that it is the school's fault or that something in your friend's life became so overwhelming that school was not a priority.

Attribution theory states that we tend to give explanations for behaviour by either believing that it is because of the person's disposition or character, or that it is because of the situation.

As we try to figure out the reasons, we tend to underestimate the impact of the situation and overestimate the impact of the person's disposition. This is called the **fundamental attribution error**. Using the example of your friend who dropped out of school, we tend to blame the behaviour on the idea that your friend is lazy, unmotivated, and has no goals or career plans after high school.

Because we judge others as having certain dispositions, we frequently commit the fundamental attribution error. We tend to attribute people's behaviour to their permanent, personal qualities. When we explain our own behaviour, we tend to include the situation as part of our explanation.

We make attribution errors all the time. These judgments about whether a person's behaviour is due to situational or personal factors can have a lasting consequence.

Just as we can influence other people's behaviour, other people can influence our behaviour.
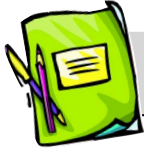
Learning Activity 5.4: Attribution

Read the following scenario and determine the cause of the accident based on attributing the cause to the situation and based on attributing the cause to the person. Finally, determine what fundamental attribution error might occur.

Your friend Miranda just got her driver's license a month ago. Yesterday, Miranda had an accident on the way to school. She hit the car in front of her when she was approaching the stop sign. The road was icy because of the freezing rain. Fortunately, no one was hurt. There was a lot of damage to both cars.

Situation attribution:

_____

_____

_____

Person attribution:

_____

_____

_____

Fundamental attribution error:

_____

_____

_____

_____

_____

_____

_____

_____

Check the answer key.

Social Influence

Social psychologists study the ways other people can influence our behaviour by looking at different social influences such as

- **conformity** (how we change our behaviour and thinking to be more like everyone else)
- **obedience** (how we do what others tell us to do)
- **persuasion** (how our attitudes can be changed by others)
- **people perception** (the impact of first impressions)

Conformity

Conformity is the tendency of people to go along with the views or actions of others. It involves similarity in behaviour and appearance to others or to a group standard. **Conformists** are people who try to be the same as everyone else. **Nonconformists** try to be different.

To illustrate conformity, let's look at a study by Solomon Asch. He showed subjects three vertical lines of varying lengths and asked them to indicate which one was the same length as a different "target" line.

Figure 5.1   ***Asch Conformity Experiment***

Card 1

Card 2
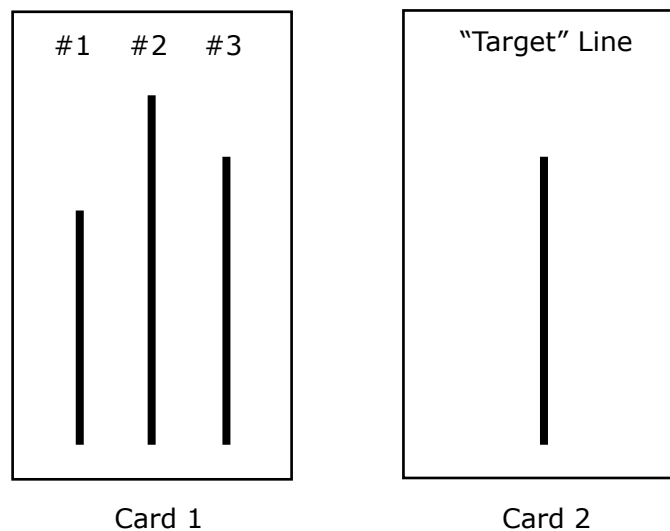
All the members in the group were asked to give their answer out loud. Each group had one subject and two confederates. The latter were people who were told to sometimes give wrong answers. The subject was always the last one to give their answer. Asch was interested in what the subjects would do when they clearly knew that the answer the confederates gave was wrong. Would they conform to a judgment they knew to be wrong or would they differ from the group?

Asch found that 33% of the time, the subjects conformed.

So when do we tend to conform? Conformity most likely occurs when

■ a group's decision is unanimous

■ you feel incompetent or insecure

■ you are impressed by the status of the group

■ you are being observed by others

■ you are in a group of three of more (You might think that there would be greater conformity when there are large groups; however, this is not the case. The tendency to conform did not significantly increase in groups larger than three.)

While conformity involves following what a group believes without being told to do so, obedience involves following what another person tells someone to do.

Obedience

Obedience is the tendency to comply with orders, whether they are implied or real, from someone who is thought to be in authority. Stanley Milgram conducted a study that focused on participants' willingness to do what another asks them to do. In his study, subjects were told that they were taking part in a study about teaching and learning. They were assigned to take the part of the teacher. The learner was a confederate. As the teacher, the subject was to give the learner an electric shock every time he or she gave an incorrect response. The subject sat behind a panel of buttons, each labeled with the number of volts. It began with 15 volts and went up to 450 volts. In reality, no shocks were ever given. The confederate pretended to be shocked by screaming in pain. As the shocks became more intense, some confederates pretended to have a heart attack and then were silent. Milgram was interested in how far subjects would go before refusing to deliver any more shocks. The results were that 60% of subjects obeyed the experimenter and delivered all the possible shocks.

Milgram conducted his study several times with some changes. One time, he let the subjects actually see the learners being shocked. Subjects who could see their learners gave fewer shocks than the subjects who could only hear the learners. Another time the experimenter left halfway through the experiment and was replaced by an assistant. Obedience decreased when this happened. Finally, when other confederates were present in the room and objected to the shocks, there was an increase in the percentage of subjects who quit in the middle of the experiment.

Milgram's experiment has been criticized on ethical grounds. Based on the ethical guidelines set by the American Psychological Association for all experiments, this experiment would never have been approved by any review board. When debriefed, many of Milgram's subjects learned that, had the shocks been real, they would have killed the learner. Many people were disturbed by learning this fact.

Milgram's experiments show us that situational factors can have a great influence on our behaviour.

Compliance and obedience are two ways that our behaviour changes due to the influence of others. Let's now look at how our attitudes can change due to the influence of others.

Persuasion

Persuasion occurs when our attitudes are changed due to the influence of others. Whether or not our attitudes will change depends on the following three factors:

1. characteristics of the person giving the message or information: If the person is physically and socially attractive, then there is a greater chance for attitude change.

2. characteristics of the message or information: If the message is similar to what the person already believes, then it will be favorably received. If the message is not similar to what the person already believes then both sides of the argument or issue are needed in order for there to be any change in attitude. If the message produces fear, then this tends to arouse people to the point where they ignore the message totally.

3. characteristics of the person receiving the message or information: This determines whether or not, once a message has been communicated, attitude change will occur.

There are different ways in which information is processed that determine whether or not a person is persuaded to change their attitude. Think about how advertisers use celebrities to change your purchasing habits. The ways that information is processed are called **routes to persuasion**. There are two information processing routes to persuasion: central route processing and peripheral route processing.

Central route processing: This type of processing occurs when the person receiving the message considers the issues and arguments that are being used to persuade them. If the person receiving the message is attentive and motivated, then long-lasting attitude change will occur.

Peripheral route processing: This type of processing occurs when the person receiving the message considers who is trying to persuade them and doesn't consider the message itself. If the person receiving the message is inattentive and unmotivated, attitudes will change though they will not be long-lasting.

In our daily lives, we come across and are influenced by public figures, celebrities, family members, personal friends, people we agree with, and people we disagree with. Over the years, we have developed schemas or mental frameworks that help us organize information and events, and interpret what is going on with others. They help us predict what others are like, sometimes on the basis of very little information. This is how we form impressions of people.

People Perception

People perception, or how we try to understand what others are like, is another social influence or way that others can affect our attitudes and behaviour.

We organize information about others to form an overall impression of that person. Sometimes, we form this impression in a very short period of time. These snap judgments that we make can sometimes be wrong. This is because we **stereotype** people based on preconceived schemas. In other words, we form simplified images for a whole group of people. We do this quickly and unconsciously, and we do this from what we see and hear. This forms our first impression of people.

As human beings, our dominant sense is vision. For this reason, physical attractiveness has a powerful effect on us in all social interactions. Physically attractive people are typically seen as being healthier, more intelligent, more sociable, and more morally upright than physically unattractive people. This creates a **halo effect**. A halo effect occurs when we think positively about everything connected with a person. For example, if you have a favourite teacher or a favourite athlete, then you believe that everything about them is good.

As you can see, first impressions are important. But are there other ways to make a good impression other than making yourself attractive? One way to encourage others to like you is to disclose some personal information about yourself. A little bit of self-disclosure can help create a favourable impression and a lot of self-disclosure can make people feel uncomfortable. Self-disclosure invites closeness or intimacy. It is like a pat on the back. It can be a welcome sign of trust and friendship. Too much self-disclosure is like someone leaning over you—an unwelcome amount of personal contact.

When we share personal information with another person, we run the risk that the other person will reject us. If they are turned off by the information, they may use it against us.

Another way that our expectations or schemas can shape the way that we respond to another person is by way of the **self-fulfilling prophecy**. When you expect or believe something about a person and then you predict that it will come true, it usually does. One factor that leads to self-fulfilling prophecies in social situations is that people tend to seek and remember information that confirms what they expect. This is called the **confirmation bias**. If a person has a stereotyped view of another person, then information that supports their view is noticed and remembered while information that contradicts their view is unnoticed or forgotten.

Besides being interested in social cognition and social influence, social psychologists are also interested in how we behave in small and large groups. The presence of others can affect us in good ways, as you will see with social facilitation, and in bad ways, as you will see with deindividuation and social loafing.

Group Influence

We are all members of many different groups and all groups have norms. These are the rules regarding how group members should act. There are specific roles that group members take on within each group. Our behaviour changes when we are in the presence of others. The change can be positive due to social facilitation or negative due to social loafing and deindividuation. Let's look at each of these concepts separately.

Social facilitation is when there is improved performance when others are around. It only occurs for tasks that are well-learned or easy. When we are being watched, our level of arousal increases. This strengthens our ability to perform well-learned or easy tasks but decreases our performance on tasks that are new or very difficult. If we find something really difficult to do, the last thing we need is someone watching us. Conversely though, if we are really good at doing something, we will do even better if given an audience.

Social loafing is the tendency for people in a group to contribute less toward a common goal than they would have if they were alone. Think about group work in school. Usually a couple of people do all the work. Social loafing occurs because when people work in a group they individually feel less accountable for what has to be accomplished and, sometimes, they may feel that their contribution to the group is not needed or wanted. They have no responsibility to the group.

Deindividuation happens when people are in a group. Their arousal level increases and their sense of responsibility is lost. They lose their sense of self which results in a loss of self-restraint. The get swept up by a group and do things that they never would have done on their own. The group members feel anonymous and aroused. This explains looting and rioting behaviour. It results in a "mob mentality".

Social facilitation, social loafing, and deindividuation help explain what effect being part of a group has on our individual behaviour. But how do groups interact?

Group Interaction

In order to understand the power of groups, we need to look at the concepts of group polarization and groupthink.

Group polarization is the enhancement of a group's already existing attitudes through discussion within the group. Discussions among those that are like-minded strengthen pre-existing attitudes. For example, if all the group members want to ban smoking in all public places, then, after discussion, the group members become more extreme or fanatic about the issue. This explains how terrorist groups emerge and become so powerful. The group as a whole makes more extreme decisions than the group members would make individually. This occurs because individuals may be exposed to new persuasive arguments that they might not have thought of themselves.

Groupthink occurs when group members hold back any doubts that they have about the ideas that are supported by the group. It appears that the group is unanimous in their views. However, it is a false unanimity. People tend to go along with the decision of a group in order to get along with the group members. They conform to the opinions of the group, even if their own opinions would lead them to a different opinion.

As you see from this lesson, our thoughts, feelings, and actions are greatly affected by others in social situations. In turn, we can also affect the thoughts, feelings, and actions of others.

Learning Activity 5.5: Social Psychology in Review

Complete the puzzle.

Down

2. It is the theory according to which we behave in such a manner to reduce the discomfort we feel when our thoughts and behaviours are inconsistent.

4. It is the theory according to which we tend to give an explanation for behaviour by looking at the situation or the person's disposition.

5. It is the enhancement of a group's attitudes through discussion with the group.

6. It is when there is improved performance of tasks in the presence of others.

7. It is the loss of self-awareness and self-restraint occurring in group situations.

Across

1. It is the scientific study of how we think about, influence, and relate to one another.

3. He is a social psychologist who researched obedience to authority.

8. It is the tendency for people who have first agreed to a small request to comply later with a larger request.

9. He is a social psychologist who researched the circumstances under which people conform.

10. It is the tendency for people in a group to exert less effect than if they are alone.

11. It is the mode of thinking that occurs when the desire for harmony in a decision-making group overrides what the person is actually thinking.

12. It is a belief and feeling that predisposes a person to respond in a particular way.

13. It is when one adjusts their behaviour or thinking to coincide with a group standard.

continued

Learning Activity 5.5: Social Psychology in Review (continued)
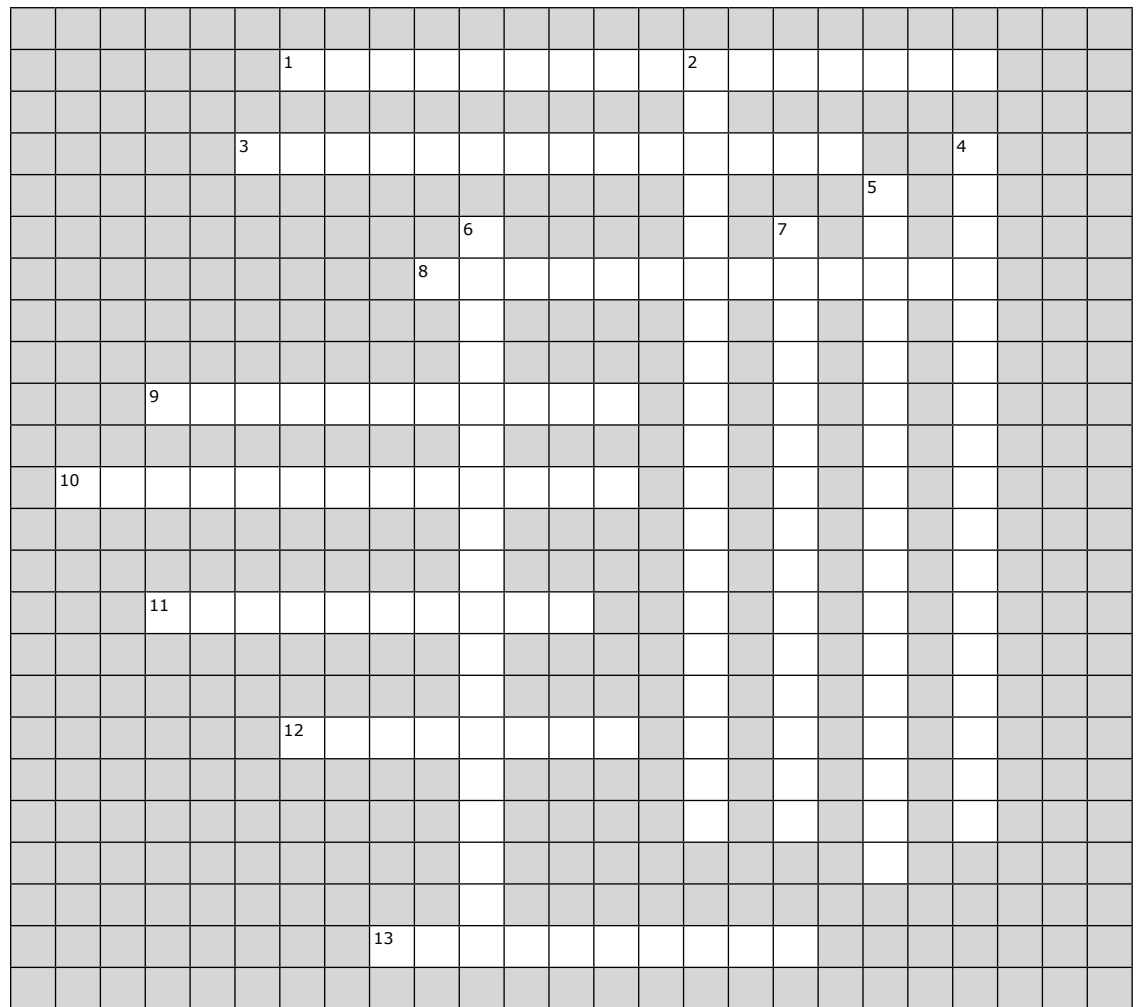
Check the answer key.

Lesson Summary

We are social beings. We influence others and we are influenced by others.

The focus of this lesson was on how

■ people think about other people and themselves by forming beliefs and attitudes

■ attitudes affect behaviour

■ behaviour affects attitudes

■ attitudes can be changed

In addition, we also examined different ways that the behaviour of others can shape or change our own behaviour. The social influences of compliance, obedience, persuasion, and first impressions were presented. The lesson ended with a look at the effects that being part of a group has on our behaviour.

The field of psychology that studies why people act differently in the same situation and why the same person might act differently in different situations is called social psychology.

LESSON 6: SOCIAL RELATIONS

Lesson Introduction

In the last lesson, we examined how we think about others, how we can influence others, and how others influence us. Because we are social beings, we exhibit a wide range of behaviours when we relate to others. These behaviours demonstrate whether or not we like someone, love someone, want to help someone, hate someone, or want to fight with someone.

In this lesson, we will look at the biological and environmental factors that affect different social relations. The social relations that will be focused on are:

1. attraction
2. love
3. altruism
4. prejudice and discrimination
5. aggression

Social psychology is interested in how our thoughts, feelings, and behaviours affect others, as well as how they are affected by others. The nature and causes of individual behaviour are important to social psychologists.

Attraction

Did you ever wonder why you are attracted to certain people more than others? The answer lies in social psychology. There are three key factors to attraction: proximity, physical attractiveness, and similarity.

Proximity: The closer you are to someone, the more you will be attracted to them. The people that we like, date, and even marry are the people who have been the closest to us (someone we went to school with, someone who lives in our neighbourhood, or someone we work with). Because of the **mere exposure** effect, if you are repeatedly exposed to new or novel stimuli, then your chance of liking them increases.

Physical Attractiveness: We know from the last lesson that beauty equals positive qualities. Appearance is the first thing that we use to help us sort out the people we want to get to know from the people we don't want to get to know. We use appearance as a filter. The standards for physical attractiveness come and go, and vary from culture to culture. One thing that is for sure is that we judge attractive people to be happier, healthier, and more successful than those who are less attractive. The way you feel about your own

attractiveness will also determine how popular you will feel and how much you will date.

Similarity: We are attracted to people who are similar to ourselves. These people have similar interests, attitudes, intelligence, and economic status. The more alike you are to your friends the longer you will remain friends.

Proximity, physical attractiveness, and similarity contribute to whether or not we are attracted to another person. One other factor, called **reciprocity-of-liking effect** also plays a role. We like people who like us. If we are a friend to someone, our own attractiveness increases.

There are many qualities that we look for in our friends. Some of the qualities that we value are the ability to keep confidences, loyalty, warmth, affection, supportiveness, honesty, intelligence, and humour.

You now know what it is to like someone. However, do you know what it is to love someone?

Romantic Love

Sometimes, we move from a good first impression to friendship, and then to the complex state of romantic love. Love is not simply a matter of liking someone to a greater degree. Love involves a different psychological state.

In the early stages of love, there is an intense physiological arousal and an all-encompassing interest in the other person. One fantasizes about the other person and experiences rapid swings of emotion.

Romantic love involves passion, closeness, fascination, sexual desire, and intense caring. When it comes to the people that we love, we tend to exaggerate their good qualities and minimize their imperfections.

There are two main types of love: passionate love and companionate love.

1. **Passionate Love:** In the presence of passionate love, there is a state of intense absorption in another person that includes intense physiological arousal and psychological interest as well as caring for the needs of the other person.

2. **Companionate Love:** In the presence of companionate love, there is a strong affection for those people with whom our lives are deeply involved. This is the love that we feel for our parents, other family members, and our friends.

With many couples, passionate love becomes companionate love. So how are companionate relationships maintained? There are two factors that are important. They are equity and self-disclosure.

1. **Equity** occurs when a person draws from a relationship the same that they put into it. They share themselves and their possessions, and they make decisions together. They also give and get emotional support, and they care about each other's well-being.

2. **Self-disclosure** occurs when a person reveals intimate details about themselves to another person. This includes their likes and dislikes, their dreams and worries, the things that they are proud of and the things that they are ashamed of.

According to psychologist Robert Sternberg, there are three main components to love. They are intimacy, passion, and decision/commitment.

■   Intimacy pertains to the feeling of closeness or connectedness.

■   Passion pertains to physical closeness and the motivational drives relating to sex.

■   Decision/commitment pertains to the thinking involved in loving someone and doing what is necessary in maintaining a relationship with them.

According to Sternberg, these three components combine to form different types of love.

Type of Love	Components that are Involved
Liking	Intimacy
Romantic Love	Intimacy and passion
Infatuation	Passion
Fatuous Love	Passion and decision/commitment
Empty Love	Decision/commitment
Companionate Love	Intimacy and decision/commitment
Consummate Love	Intimacy, passion, and decision/commitment
Nonlove	No components are involved

Attraction and love are both positive relations. Another positive relation is called altruism.

Altruism

Have you ever thought about why you help others and when you are most or least likely to help others? **Altruism** is the unselfish concern for the welfare of others. People exhibit acts of courage, for example, when they rescue people from burning buildings, help assault victims, and assist when there are car accidents.

Social psychologists took an interest in the idea of altruism after a woman by the name of Kitty Genovese was brutally raped and murdered in New York in 1964. What astonished everyone was that many of her neighbours heard her screaming trying to fight off her attacker. As a matter of fact, 38 people heard her cry for help. She was able to run for help but her attacker caught her and stabbed her. The attack on the street lasted for 30 minutes. Guess what? No one helped her. After 50 minutes of this attack, someone called the police.

Why didn't anyone help her? Was it because they didn't care, they didn't like her, they didn't want to get involved, or they had been so desensitized to violence in their neighbourhood that they didn't give it a second thought?

Two psychologists, John Darley and Bibb Latane, believed that the neighbours chose not to help because of something they called the **bystander effect**. This is the tendency for any given bystander to be less likely to provide help if other bystanders are present. They tested their theory by staging various false emergency situations.

Darley and Bibb (1968) found that bystanders will help only under three conditions:

1. The situation enables them to notice the incident.
2. They interpret the event as an emergency.
3. They assume responsibility for helping.

At each of the above steps, the presence of others can turn people away from the path that leads them to helping.

How do we decide if we are going to help someone in need? There are many circumstances that make us more likely to help.

- We are not in a hurry.
- We believe that the victim deserves help.
- We are in a good mood.
- We believe that the victim is similar to us.
- We feel guilty if we don't help.
- We are in a small town or rural area.

- We just saw someone else being helpful.
- The victim is female.
- We believe no one else is available to help.
- We are in a familiar environment.
- We believe that our actions will not put us in danger.

There are many circumstances that make us less likely to help.

- We think that helping would be looked upon as being foolish.
- We think others have chosen not to help for a good reason.
- We think that someone else will help.
- We are unfamiliar with the environment.
- We think that by doing something small to help, we will also have to do something larger later.

Helping behaviour, or altruism, is an example of a pro-social behaviour. People tend to look to others when they are deciding whether or not to help someone in need. The larger the group that witnesses a problem, the less likely it is that any one individual will feel the need to help. This is known as **diffusion of responsibility**. People think that someone else will take action, so they do not need to.

Learning Activity 5.6: The Bystander Effect

Read the following scenarios and apply the bystander effect to each one.

1. Rachel is walking down a busy street on a snowy day. At the side of the street, a woman is crouched down shivering.

   What does Rachel do?

   _____

   _____

   Why?

   _____

   _____

   What would change Rachel's behaviour?

   _____

   _____

   _____

2. Jordan is visiting a college because he hopes to attend classes there next year. As he is walking across the campus, he sees a man lying on the ground. Everyone around him is just walking past the man.

   What does Jordan do?

   _____

   _____

   Why?

   _____

   _____

   What would change Jordan's behaviour?

   _____

   _____

   _____

continued

Learning Activity 5.6: The Bystander Effect (continued)

3. Eliza is driving home late at night on an unfamiliar road when she sees a man standing by a car flagging her down.

What does Eliza do?

_____

_____

Why?

_____

_____

What would change Eliza's behaviour?

_____

_____

_____

Check the answer key.

So far in this lesson, we have looked at attraction, love, and altruism—all of which involve positive relations. Unfortunately, we live in a world with people who exhibit negative relations—prejudice, discrimination, and aggression.

Prejudice and Discrimination

Earlier in the lesson we talked about **stereotypes** (generalized beliefs about a group of people). The truth is that stereotypes go hand in hand with prejudice. **Prejudice** is defined as an unjustifiable and usually negative attitude toward a group based on stereotyped beliefs and negative feelings toward that group. When that prejudice turns into taking action against a group of people because of stereotyped beliefs and feelings of prejudice then that is called **discrimination**.

- Stereotypes involve beliefs.
- Prejudice involves attitudes.
- Discrimination involves actions.

Prejudicial attitudes can focus on gender, race, age, religion, body size, height, mental ability, and so on. Prejudice filters what we see and how we think about it. It can be obvious or subtle.

Where does prejudice come from? Why are some people prejudiced? Social inequality and social divisions are responsible. In reality, some people have power, prestige, and money, while others do not. We tend to believe that those people who succeed are good and those people who don't succeed are bad. Good is rewarded and bad or evil is punished. The **just-world phenomenon** is the tendency of people to believe the world is just and that people therefore get what they deserve and deserve what they get. This is a false assumption which can lead to a justification of our prejudices. Haven't you ever heard someone say that the poor deserve to be poor because they are lazy and they don't try to get better jobs or any job? Comments like this are unjustified and prejudicial. Why do some people have these prejudicial attitudes?

We all have the need to belong to a group. We associate with certain groups and stay away from other groups. The group of people with whom we share a common identity are called the **in-group**. The group of people who we perceive as different from us are called the **outgroup**. We tend to favour our own group. This is called **in-group bias**. We often do this at the expense of the people in the outgroup. Ingroups are also referred to as **cliques**. Are you in a clique? Some common cliques in high school are the skaters, the preps, the band kids, the jocks, the Goths, and the geeks.

If you belong to a clique, how do you prejudge the people who are not members of your in-group? Do you act on your prejudices? In other words, do you discriminate against the people in the outgroup?

When things go wrong for us, we tend to blame others. We use others, typically people from an outgroup, as the target of our anger or frustration. When we act on those beliefs and attitudes, then we discriminate against others. **Scapegoat theory** states that prejudice offers an outlet for anger by providing someone to blame.

Prejudice comes from social inequality and social divisions—the rich and the poor, the haves and the have-nots. We naturally form groups and tend to blame others when things go wrong for us. At the same time, we are trying to understand the world that we live in. We do this by categorizing people.

Unfortunately, because of categorization, we get tunnel vision and adopt a simplified view of people that are different than us. What can we do to reduce prejudice? One idea is to bring together members of different groups and have them work together on reaching a goal that would benefit everyone. This is known as **contact theory**.

Learning Activity 5.7: Prejudicial Biases

Many of us deny that we have any prejudicial biases; however, this general kind of statement is just not true. Because our brains detect patterns in what we experience, we are able to generate prejudicial conclusions based on very little information. A negative experience with even one representative of a group can change how we think about that group.

Look at the following groups and rate your prejudice toward them.

Police officers

very negative	neutral	very positive
←		→

Cheerleaders

very negative	neutral	very positive
←		→

Convicted pedophiles

very negative	neutral	very positive
←		→

High school vice principals

very negative	neutral	very positive
←		→

Blondes

very negative	neutral	very positive
←		→

Men who wear toupees

very negative	neutral	very positive
←		→

Hunters

very negative	neutral	very positive
←		→

Learning Activity 5.7: Prejudicial Biases (continued)

AIDS patients

very negative   neutral   very positive

←————————————————————————————————————→

Obese people

very negative   neutral   very positive

←————————————————————————————————————→

People of a different race than you

very negative   neutral   very positive

←————————————————————————————————————→

People with a different religious background than you

very negative   neutral   very positive

←————————————————————————————————————→

Do you notice any kind of pattern? When we have prejudicial attitudes toward others and then act on these feelings, we discriminate. The verbal or physical behaviour is called aggression.

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

Aggression

Aggression is defined as any verbal or physical behaviour that is intended to hurt or destroy.

Why are we aggressive? We look to both nature and nurture to get a better understanding.

Biology of Aggression

Biology affects aggression at three different levels. There are:

1. genetic influences
2. neural influences
3. biochemical influences

Genetic influences: We know that some types of animals, dogs in particular, are bred for aggressiveness. The effect of genes is also evident in studies with twins. If one identical twin tends to respond aggressively to situations, then it is likely that the other identical twin will respond in a similar way. In the case of fraternal twins, it is less likely that they will respond in similar ways.

Neural influences: No one spot in the brain controls aggression. Aggression is a complex behaviour that occurs in different situations. Nonetheless, both animal and human brains have areas that, when stimulated, will either inhibit or produce aggressive behaviours. Two such areas are the amygdale and the frontal lobe.

Biochemical influences: The hormone testosterone influences the neural systems that control aggression. In addition, when alcohol is in the bloodstream, aggressive responses also increase.

Psychology of Aggression

We are biologically predisposed to aggression. The following are the three psychological factors that trigger that behavioural response:

1. aversive events
2. rewarding aggressive behaviour
3. observing aggressive role models

Aversive events: When we feel miserable, we tend to make others feel miserable as well. The frustration that we feel creates anger, and anger leads to aggression. This is tied to the fight or flight response. Aversive events can include rejection, being bullied, or having a loved one die. When frustration leads to aggression, social psychologists call this the **frustration-aggression principle**.

Rewarding aggressive behaviour: When being aggressive gets us what we want, we are more likely to repeat that behaviour. If the bully gets away with bullying, then the bully will continue to repeat the behaviour. If we see others being rewarded for aggressive behaviour, then simply seeing others can affect our own behaviour.

Observing aggressive role models: When we see others acting aggressively, we are more likely to imitate what we see. This can occur in real life by imitating parents, family members, or friends. It can also occur by watching violence on television, at the movies, or in video games where the pain and suffering of the victims is not usually shown to viewers.

Like all behaviour, aggression is an interaction between nature and nurture.

Lesson Summary

We are social beings. We exhibit a wide range of behaviours when we relate to others. These behaviours demonstrate whether or not we like someone, love someone, help someone, hate someone, or fight with someone.

In this lesson, we examined the biological and environmental factors that affect different social relations. The following are the social relations that we focused on:

- attraction
- love
- altruism
- prejudice and discrimination
- aggression

The complex combination of biological and environmental factors affects our social relations (the way we relate to one another).

Assignment 5.3: Social Relations (10 marks)

Dear relationship expert,

I have been dating someone for about eight months. I feel as though she is losing interest in me. We go to different high schools on opposite sides of the city. I therefore can't spend as much time with her as I would like. I'm afraid that she may have fallen for some other guy from her own high school. Can you give me some advice about how to win her back?

Signed,

Worried and Weary

The relationship expert has gone on vacation. The column editor, who knows you've been studying the principles of physical attraction and love at school, has asked you to step in and write the column. He thinks you'd be just the right person to advise Worried and Weary.

In this assignment, you will use what you have learned in the lessons on social psychology to make some recommendations to help Worried and Weary in his romantic dilemma. Answer the following questions in the space provided.

1. How would **proximity** principles influence your advice? *(2 marks)*

_____

_____

_____

_____

_____

_____

_____

continued

Assignment 5.3: Social Relations (continued)

2. What could you recommend regarding **physical attractiveness**? *(2 marks)*

_____

_____

_____

_____

_____

_____

3. How would **similarity** principles influence your advice? *(2 marks)*

_____

_____

_____

_____

_____

_____

4. How would you address the importance of establishing **equity** in enduring relationships? *(2 marks)*

_____

_____

_____

_____

_____

_____

5. What role should **self-disclosure** play in securing the relationship? *(2 marks)*

_____

_____

_____

_____

_____

_____

LESSON 7: CROSS-CULTURAL PSYCHOLOGY

Lesson Introduction

Researchers who examine cultural differences by conducting research on many groups of people from different cultures are called cross-cultural psychologists. They conduct their research to test their hypotheses on many groups of people in order to understand whether certain principles apply across cultures.

In this lesson, you will learn what culture is and isn't, what the cultural styles of individualism and collectivism are all about, and what effects ethnocentrism has on how we view the multicultural world we live in.

What is Culture?

The word "**culture**" is used in many different ways. Psychologically speaking, it emphasizes the learning and problem-solving techniques that are associated with a particular culture.

Culture can be defined as the shared attitudes, beliefs, norms, and behaviours of a group that are communicated from one generation to the next. They ensure the survival of the group. Our culture helps us understand life and influences the decisions that we make. For example, culture is reflected in

- the food that we eat
- the clothes that we wear
- the houses that we live in
- the technology that we use
- the mode of transportation that we use
- the activities that we participate in

Culture is not equal to race. Two people can be of the same race and yet be very different culturally. Race is a set of characteristics that are in your genetic code, it is not learned. Culture is a set of behaviours and beliefs that you learn from the people in your environment. Those people born of a certain race do not necessarily adopt the culture stereotype of that race.

The term **ethnicity** includes the concepts of both race and culture. It is used when you are referring to a group that has a common nationality, culture, or language.

How and why do cultural traditions develop? There are four factors that influence the development of a culture.

1. Environment

   If there are no natural resources available to a community or a society, then the members of the community or society must work together in order to survive. Teamwork becomes essential.

2. Population density

   Societies with higher population densities require more rules to maintain social order. This helps the society function more effectively.

3. Technology

   The widespread use of computers has brought on an increase in the ability to work alone rather than with others. The rules regarding interactions have also changed very rapidly. There is little need for face-to-face interactions.

4. Climate

   Differences in lifestyle are sometimes caused by climate. Weather affects the clothes that we wear and the food that we eat.

What kind of culture were you raised in? Was it one where you see yourself as an independent person whose personal goals are more important than the needs of others? Was it one where you see yourself connected to others, sacrificing your own needs to satisfy those of the group? Does your culture value individualism or collectivism?

Learning Activity 5.8: Defining your Culture

We all have a cultural background. Culture can be defined as the shared attitudes, beliefs, norms, and behaviours of a group that are communicated from one generation to the next. They ensure the survival of the group. Our culture helps us understand life and influences the decisions that we make.

In this learning activity, you are to reflect on your own culture or about a culture with which you are very familiar. Think about the following:

■ traditions

■ rules

■ standards of acceptable behaviour

■ ways of celebrating important events

■ ways of interacting with others

■ rules involving gender roles

■ rites of passage

■ food

■ clothing

■ houses

■ technology used or not used

■ mode of transportation

■ activities in which one participates

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

Individualism and Collectivism

Individualism is a cultural style that places personal goals or needs ahead of group goals or needs. **Collectivism** is a cultural style that places group goals or needs ahead of personal goals or needs.

Not every culture can be classified as either individualistic or collectivist. Think of cultural style as being on a continuum from individualism to collectivism. It is the degree to which your needs, wishes, and values reflect your individual needs or the needs of the groups to which you belong. Canadian teens have a strong tendency toward individualism where they place their own personal goals ahead of group goals.

When we use the individualism-collectivism continuum, we can predict and interpret cultural differences without relying on the impression that we have about a particular culture. This continuum affects cultural differences in self-concept, motivation, and emotion.

Self-Concept

Our sense of self or **self-concept** is tied to how we understand the world around us and our relationships with others in that world. It influences our every thought, action, and feeling. The way that we think about ourselves varies from culture to culture.

People raised in an individualistic culture have an independent understanding of self. In other words, the sense of self is separated from other people. The focus is on an individual's abilities, intelligence, personal goals, and likes and dislikes.

People raised in a collectivist culture have an interdependent understanding of self. In other words, the sense of self is connected to other people in the group. The focus is on the roles that a person plays within a group.

Being raised in an individualist or collectivist culture influences what motivates our behaviour and influences our emotional reactions.

Motivation and Emotion

Motivation, specifically achievement, is a desire to excel. It is a product of our cultural environment.

- In individualistic cultures, motivation is seen as coming from an internal push and achievement as an individual triumph.
- In collectivist cultures, motivation relates to how to raise the family's status. There is a desire to achieve out of a sense of indebtedness to the family.

Psychologists are interested in why two people of equal intelligence, but of two different cultures, have different achievement motivation. Part of the answer can be found in a study of the cultural differences in achievement motivation.

Motivation is closely tied to emotion. Does this mean that there are cultural differences with respect to identifying emotions?

Researchers have discovered many emotions—such as happiness, anger, and fear—that are common to all cultures. There are, however, emotions that are unique to a particular culture. These are called **indigenous emotions**. The following are three examples:

1. Amae: This is a Japanese emotion that refers to the desire or expectation for another person's benevolence or favour.
2. Fago: This is an Ifaluk (Micronesian) emotion that combines compassion, love, and sadness. It promotes helping behaviour.
3. Ker: This is an Ifaluk (Micronesian) emotion that combines happiness and excitement. It is perceived to be dangerous and socially unacceptable.

Researchers who examine cultural differences do so by conducting **cross-cultural research**. This type of research tests hypotheses on many groups of people to understand whether certain principles apply across cultures.

- If the principles are true only for people of a certain culture, then it is called **culture-specific**.
- If the principles are true of people of all cultures, then they are **universal** principles. These principles apply to all humans. Universal behaviours are ones that are common to all people. Language is a universal behaviour and the statement that all people use language is a universal principle.

Let's look at another example. Looking at someone while speaking to them is a culture-specific principle. Being polite to someone while speaking to them is a universal principle.

The principles that cross-cultural researchers are interested in include personality, development, cognition, morals, and attachment theory. Let's look at each one separately.

Cross-cultural Principles

Culture and Personality

People such as Freud, Jung, Maslow, Allport, Bandura, Rotter, and Rogers, who came from Western civilizations, view personality as a relatively enduring set of behaviours and thought processes that remain stable over time and in different situations. This is not, however, a worldwide view of personality. In some parts of Africa, for example, a three-layer model is used to explain personality. The inner layer is spirituality, the middle layer is psychological strength, and the outer layer is physical strength. It is believed that the three layers change according to the situation. It is therefore evident that not all parts of the world accept the Western theory of personality.

Personality theorists are also interested in an individual's locus of control (one's perception of the source of control over what happens in their life). Some people have an **external locus of control** and believe outside forces determine what happens to them. Some people have an **internal locus of control** and believe they control their own fate. It should be no surprise that Westerners have an internal locus of control while people from Asian and African countries have an external locus of control.

Culture and Development

All children in all cultures develop physically, cognitively, and socially. The rules and patterns of behaviour that are expected from a culture are learned and internalized. These rules and patterns are learned from parents, relatives, friends, school, and the media. Following the rules and patterns of a person's culture makes them feel comfortable because they know that they are meeting the expectations of the group. This is called **socialization**. It is the process by which a person learns and internalizes the rules and patterns of behaviour that are affected by culture.

When people view the world through the filters of their culture, it is called ethnocentrism.

Ethnocentrism

Ethnocentrism is the tendency to view the world based on your own experiences or through your own cultural filters. It is neither good nor bad; it is just the way things are. We are all ethnocentric to some degree.

- Those who are aware of their cultural filters know that the way they perceive and interpret the behaviour of others is only one way of doing so and that their interpretations may not be accurate.

- Those who are unaware of cultural filters believe that their own way is the only way of perceiving the world and they rarely recognize their inaccurate perceptions.

We can develop **flexible ethnocentrism** when we interact with others while accepting that we are all ethnocentric.

- We must understand the reality of our own cultural filters so that we see things in a certain way.
- We must recognize and appreciate the fact that people of different cultural backgrounds produce their own distortions of reality.
- We must learn to deal with our emotions and judgments by giving ourselves a chance to go beyond initial reactions, by learning about others' viewpoints, and by putting emotional reactions on hold.
- We must not abandon our own filters. Instead we must gain new skills and knowledge to help us see things from different perspectives.

Inflexible ethnocentrism creates problems in our multicultural world.

- We are unable to see beyond our own cultural filters.
- We are unable to gain other viewpoints.

This can lead to stereotypes or generalized images with regard to groups of people.

Just because we are aware of cultural conflicts and we study them, it does not mean that they will disappear. We need to respect and appreciate all the cultural differences that exist. Cross-cultural psychologists will continue to explore similarities and differences between cultures.

Lesson Summary

Researchers who examine cultural differences by conducting research on many groups of people from different cultures are called cross-cultural psychologists. They conduct their research and test their hypotheses on many groups of people in order to understand whether certain principles apply across cultures.

This lesson dealt with culture, the cultural styles of individualism and collectivism, and the effects of ethnocentrism on how we view our multicultural world.

Notes

MODULE 5 SUMMARY

Congratulations. You have finished the Module 5 of the course.

Submitting Your Assignments

It is now time for you to submit your assignments from Module 5 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 5 assignments and organize your material in the following order:

❏ Module 5 Cover Sheet (found at the end of the course Introduction)

❏ Assignment 5.1: Mood Disorder Analysis

❏ Assignment 5.2: Case Study

❏ Assignment 5.3: Social Relations

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Final Examination

Congratulations, you have finished Module 5 in the course. The final examination is out of 100 marks and worth 20% of your final mark. In order to do well on this examination, you should review all of your learning activities and assignments from Modules 4 and 5.

You will complete this examination while being supervised by a proctor. You should already have made arrangements to have the examination sent to the proctor from the Distance Learning Unit. If you have not yet made arrangements to write it, then do so now. The instructions for doing so are provided in the Introduction to this module.

A maximum of **3 hours** is available to complete your final examination. When you have completed it, the proctor will then forward it to the Distance Learning Unit for assessment. Good luck!

Exam Format

The final examination consists of four types of questions; the values of which combine for a total of 100 marks.

The final examination will have four parts.

- **Matching Definitions and Famous Psychologists (15 marks)**

  You will match a list of terms with corresponding definitions as well as psychologists and their theories. Each definition will be used only once. There will be 30 questions worth 0.5 mark each.

- **Multiple-Choice Questions (35 marks)**

  In the multiple choice section of the exam, you will choose the single best answer to each of the questions given. There will be 35 questions worth 1 mark each

- **Short-Answer Questions (20 marks)**

  You will be asked to choose 4 out of 5 short-answer questions (5 marks each). You will be asked to answer each question clearly and thoroughly in the space provided.

- **Long-Answer Questions (30 marks)**

  You will be asked to choose 3 out of 4 long-answer questions (10 marks each). You will be asked to answer each question clearly and thoroughly in the space provided.

Study Strategies

In preparing for this examination, first **review all learning activities and assignments** that you completed in this course. You can answer the questions in those exercises as if you were asked to answer these again and then you can compare your answers with the answer key as well as with the answers you wrote when you completed the modules.

Reviewing vocabulary is also an excellent way to review concepts. You can practice defining terms and psychological theories—perhaps by using index cards (using one side for a term and the other side for its definition). Keep in mind that one section of the exam asks you to *connect* pairs of terms by explaining how they are related, so try to connect the vocabulary terms to one another as you study their definitions.

Good luck as you prepare for the final examination. If you have completed all of the learning activities and assignments, and have studied using the suggestions above, you have prepared yourself well. The examination will be an opportunity for you to show what you know.

The final practice examination is also an excellent study aid for reviewing Modules 4 and 5.

Final Practice Examination and Answer Key

To help you succeed in your examination, a practice examination can be found in the learning management system (LMS). The midterm practice examination is very similar to the actual examination that you will be writing. The answer key is also included so that, when you have finished writing the practice examination, you can check your answers. This will give you the confidence that you need to do well on your examination. If you do not have access to the Internet, contact the Distance Learning Unit at 1-800-465-9915 to get a copy of the practice examination and the answer key.

To get the most out of your final practice examination, follow these steps:

1. Study for the final practice examination as if it were an actual examination.

2. Review those Learning Activities and Assignments from Modules 4 and 5 that you found the most challenging. Reread those lessons carefully and learn the concepts.

3. Ask your learning partner and your tutor/marker for any help you need.

4. Review your lessons from Modules 4 and 5, including all of your notes, learning activities, and assignments.

5. Bring the following to the final practice examination: pens/pencils (2 or 3 of each) and blank paper.

6. Write your final practice examination as if it were an actual examination. In other words, write the entire examination in one sitting, and don't check your answers until you have completed the entire examination. Remember that the time allowed for writing the final examination is 3 hours.

7. Once you have completed the entire examination, check your answers against the answer key. Review the questions that you got wrong. For each of those questions, you will need to go back into the course and learn the things that you have missed.

M ODULE 5

Learning Activity Answer Key

Learning Activity 5.1: Psychological Behaviours

Consider the following scenarios. For each, indicate if it should be considered a psychological disorder. Use the criteria of maladaptive, unjustifiable, disturbing, and atypical to help with your decision. Use the chart provided after the scenarios to record your answers.

1. In December of 1999, John was convinced that massive computer malfunctions (caused by Y2K incompatibility) would mean the end of the world. He stockpiled supplies of canned food, bottled water, gasoline, and propane. He also bought a generator. He kept the gasoline and propane in tanks in his basement. While not particularly safe, this was the best place he could find to store them.

2. Mark is in Grade 11 and has finally accepted that he has a strong physical attraction to other males. He is afraid to tell his parents and friends because he fears they will be angry with him or lose respect for him. Mark is suffering from a great deal of anxiety because he has to hide his true feelings from the people whom he cares about the most. He is also concerned that his lifestyle choice will prevent him from fulfilling other dreams, such as raising a family and becoming a politician.

3. Nicholas joined the military after high school. He was assigned to serve in a war-torn country. Last week, his battalion was attacked and many soldiers were killed. Nicholas feels that killing is wrong, even in these circumstances, and risked his own life by refusing to fire his weapon. His choice cost some of his peers their lives.

4. Braden is passionate in his belief that animals should not be used in research. He has devoted his life to the cause. Last week, he bombed the administrative office of a pharmaceutical company that is known to perform animal research. Four people were injured in the explosion and one died.

5. Marie has smoked since she was 14 years old. She is now 32 and is unable to quit despite having tried several times. Her most recent attempt to quit occurred eight months ago when she became pregnant with her first child. That only lasted four weeks. Now, at eight months pregnant, she hides her cigarette smoking from her family and friends.

6. Joanna's father died suddenly two weeks ago. She was numb for about a week but now she is overwhelmed by sadness. She has not gone back to school yet because she can't get herself out of bed in the morning. She eats very little and feels scared that she will not be able to cope with future challenges.

7. Marisa claims that she was a warrior princess in a past life. She believes that she can "channel" this previous personality and she makes a living by allowing her "warrior princess" self to channel advice to paying customers.

8. Juanita wears a crystal that was given to her as a child. She believes that with the help of the crystal she can see the auras of other people. Two weeks ago, she lost her crystal. She has since become very anxious. Without the crystal, she claims that she can't concentrate on her work. She is in danger of losing her job.

9. Joachim is afraid of driving or riding in a motor vehicle. When he was 17, his brother was killed in a fatal car collision. He had been the driver of the car and had walked away with only a few minor injuries. Now, at age 27, he still refuses to get into any motor vehicle. Fortunately, he has always been able to function normally because he can easily walk to work. His family also lives within walking distance.

10. Joachim (from the previous scenario) is now 33 and married. His wife is pregnant and insists that Joachim get over his fear of cars. He has tried several times to get over his fear; however, he finds that he is overcome by paralyzing fear as soon as he sets foot into a taxi or car.

Use the following chart to see which criteria are met in each of the scenarios. Place an X if the criteria are met.

- Maladaptive means destructive to oneself or others.
- Unjustifiable means that there is no rational basis.
- Disturbing means that it is troublesome to other people.
- Atypical means that it is so different that it violates societal or cultural rules.

Scenario	Maladaptive	Unjustifiable	Disturbing	Atypical
John		X	X	
Mark	X			
Nicholas	X			X
Braden	X		X	X
Marie	X		X	X
Joanna	X		X	
Marisa		X	X	
Juanita			X	
Joachim at 27			X	
Joachim at 33	X		X	

Learning Activity 5.2: Psychological Disorders

Read each of the following scenarios and identify the possible psychological disorder. Some of the disorders were presented in Lessons 2 and 3.

1. After weeks of feeling dejected, having no energy, and being dissatisfied with his life, Fred has suddenly become ecstatic and energetic. He talks constantly about his far-fetched plans for making huge amounts of money. __**bipolar**__

2. Alayna worries about everything and can never relax. She is very jumpy, has trouble sleeping at night, and has a poor appetite. For the last few months, she has been unable to concentrate at work and is in danger of losing her job. __**generalized anxiety disorder**__

3. Bianca, a nineteen-year-old college student, has missed almost all of her classes this past month. She sleeps fourteen hours a day, has withdrawn from friends and family, feels worthless, and cries for no apparent reason. __**major depressive disorder**__

4. Carl can't bear to be in small enclosed spaces, such as elevators, and goes to great lengths to avoid them. Recently, he turned down a high-paying job with an air conditioning repair company because it involved working in crawl spaces. __**claustrophobia**__

5. Kary believes that others are talking about her and actively plotting against her. She hears voices that tell her to carry a knife in her purse to protect herself. __**paranoid schizophrenia**__

6. Ever since going through a very painful divorce, Kayla has experienced a number of terrifying "spells" that seem to come out of nowhere. Her heart suddenly starts to pound, she begins to sweat and tremble, and she has trouble breathing. __**panic disorder**__

7. For as long as she can remember, Marla has felt negative about life. Although good things occasionally happen in Marla's life, they have little impact on her gloomy mood. She functions adequately but she has few friends because she is so pessimistic. __**dysthymic disorder**__

8. Nancy speaks slowly and in the same tone. She has reduced emotional responsiveness and few expressive gestures. Her speech is limited to brief empty comments. __**catatonic schizophrenia**__

9. Harry disinfects his shoes, clothing, floor, and doorknobs with bleach several times a day. Nevertheless, he is tormented by worries that his apartment may be contaminated by germs from the outside. He doesn't allow anyone to come into his apartment for fear they will contaminate his furniture and belongings. __**obsessive compulsive disorder**__

10. Tyler said to his psychiatrist, "Today is infinity's horseman." He acted surprised that his therapist did not understand what he meant. When a friend told him that he was sad because of a death in the family, Tyler responded by laughing hysterically.   **disorganized schizophrenia**

11. Jay, a high school teacher in Calgary, disappeared three days after his wife unexpectedly left him for another man. Six months later, he was discovered tending bar in Brandon. Calling himself Martin, he claimed to have no recollection of his past life and insisted that he had never been married.   **dissociative fugue**

12. Marian and her brother were recently involved in an automobile accident. Marian was not seriously injured but her brother was killed. Marian is unable to recall any details from the time of the accident until four days later.   **dissociative amnesia**

13. Norma has frequent memory gaps and cannot account for her whereabouts during certain periods of time. After she expressed suicidal thoughts, her husband brought her to the hospital. While being interviewed by a clinical psychologist, she began speaking in a childlike voice. She claimed that her name was Donna and that she was only six years old. Moments later, she seemed to revert to her adult voice and had no recollection of speaking in a childlike voice or claiming that her name was Donna.   **dissociative identity disorder**

14. Sadie was brought into the hospital emergency room by her family who reported that she experienced a sudden onset of blindness. The family explained that Sadie had just discovered that her husband had been having an affair. She was arguing with her husband when she suddenly announced that she couldn't see.   **conversion disorder**

15. Thuan, a Vietnamese refugee, can't stop thinking about the horrors he experienced while fleeing his country by boat. He sleeps poorly and is often awakened by terrifying nightmares.   **post-traumatic stress disorder**

16. Walt has been chronically worried about his health for years. During his last doctor's appointment, his blood pressure was slightly elevated. The doctor suggested that he make an appointment to check it again in a month; nonetheless, he indicated that he did not need medication. Despite the reassurance, Walt became convinced that he had hypertension and began to complain of vague chest pain.   **hypochondriasis**

Learning Activity 5.3: Cognitive Dissonance

The following situations are examples of behaviours and attitudes that are not consistent with each other. In other words, they are examples of cognitive dissonance. For each one, identify the attitude and the behaviour and describe how to lessen the inconsistency between the two.

1. Teenagers drive over the speed limit even though they know that doing this is dangerous.

   Attitude: **Driving over the speed limit is dangerous.**

   Behaviour: **Drive over the speed limit.**

   Reduce the cognitive dissonance by **either concluding that driving over the speed limit is not dangerous or keeping your speed to the limits that are set.**

2. You hate chemistry class and your teacher has asked you to encourage some younger students to sign up for the class next year. You speak to the younger students.

   Attitude: **You hate chemistry class.**

   Behaviour: **You tell younger students that chemistry is a good class.**

   Reduce the cognitive dissonance by **either believing that chemistry is a good class or not sounding too enthusiastic when you speak to the younger students about signing up for the class.**

3. You buy a used television even though it wasn't quite what you wanted. Two weeks later, you find a new television for the same price that has everything you wanted. You can't return the used television to the person you bought it from.

   Attitude: **You want to buy a television and get the best that you can get for your money.**

   Behaviour: **You buy a television that isn't exactly what you wanted.**

   Reduce the cognitive dissonance by **either thinking that your used television has everything that you wanted or you sell the used television and buy the new one.**

Learning Activity 5.4: Attribution

Read the following scenario and determine the cause of the accident based on attributing the cause to the situation and based on attributing the cause to the person. Finally, determine what fundamental attribution error might occur.

Your friend Miranda just got her driver's license a month ago. Yesterday, Miranda had an accident on the way to school. She hit the car in front of her when she was approaching the stop sign. The road was icy because of the freezing rain. Fortunately, no one was hurt. There was a lot of damage to both cars.

Situation attribution: **The accident is blamed on the road conditions at the time.**

Person attribution: **The accident is blamed on Miranda's lack of driving experience.**

Fundamental attribution error: **Miranda blames the weather conditions for her accident. However, her friends blame the accident on Miranda's lack of experience or on her driving instructor.**

Learning Activity 5.5: Social Psychology in Review

Complete the puzzle.

Down

2. It is the theory according to which we behave in such a manner to reduce the discomfort we feel when our thoughts and behaviours are inconsistent.
4. It is the theory according to which we tend to give an explanation for behaviour by looking at the situation or the person's disposition.
5. It is the enhancement of a group's attitudes through discussion with the group.
6. It is when there is improved performance of tasks in the presence of others.
7. It is the loss of self-awareness and self-restraint occurring in group situations.

Across

1. It is the scientific study of how we think about, influence, and relate to one another.
3. He is a social psychologist who researched obedience to authority.
8. It is the tendency for people who have first agreed to a small request to comply later with a larger request.

9. He is a social psychologist who researched the circumstances under which people conform.

10. It is the tendency for people in a group to exert less effect than if they are alone.

11. It is the mode of thinking that occurs when the desire for harmony in a decision-making group overrides what the person is actually thinking.

12. It is a belief and feeling that predisposes a person to respond in a particular way.

13. It is when one adjusts their behaviour or thinking to coincide with a group standard.

c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18	c19	c20	c21
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Learning Activity 5.6: The Bystander Effect

Read the following scenarios and apply the bystander effect to each one.

1. Rachel is walking down a busy street on a snowy day. At the side of the street, a woman is crouched down shivering.

   Rachel probably does not offer any assistance because she believes that there are other people around that will help. She may help if she thinks the woman on the street is in critical condition and if the location of this event is familiar to her.

2. Jordan is visiting a college because he hopes to attend classes there next year. As he is walking across the campus, he sees a man lying on the ground. Everyone around him is just walking past the man.

   Jordan probably does not stop to help because he is unfamiliar with the campus and he sees that no one else has stopped to help. He might help if he believed that the man on the ground was in critical condition.

3. Eliza is driving home late at night on an unfamiliar road when she sees a man standing by a car flagging her down.

   Eliza will probably not stop to help because no one else has stopped and she is unfamiliar with the road. She may help if she believes that the man is seriously injured.

Learning Activity 5.7: Prejudicial Biases

Many of us deny that we have any prejudicial biases; however, this general kind of statement is just not true. Because our brains detect patterns in what we experience, we are able to generate prejudicial conclusions based on very little information. A negative experience with even one representative of a group can change how we think about that group.

Look at the following groups and rate your prejudice toward them.

Police officers

very negative   neutral   very positive

←——————————————————————————————→

Cheerleaders

very negative   neutral   very positive

←——————————————————————————————→

Convicted pedophiles

very negative   neutral   very positive

←——————————————————————————————→

High school vice principals

very negative   neutral   very positive

←——————————————————————————————→

Blondes

very negative   neutral   very positive

←——————————————————————————————→

Men who wear toupees

very negative   neutral   very positive

←——————————————————————————————→

Hunters

very negative   neutral   very positive

←——————————————————————————————→

AIDS patients

very negative   neutral   very positive

←——————————————————————————————→

Obese people

very negative   neutral   very positive

←——————————————————————————————→

People of a different race than you

very negative   neutral   very positive

←——————————————————————————————→

People with a different religious background than you

very negative   neutral   very positive

←——————————————————————————————→

Do you notice any kind of pattern? When we have prejudicial attitudes toward others and then act on these feelings, we discriminate. The verbal or physical behaviour is called aggression.

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

Learning Activity 5.8: Defining your Culture

We all have a cultural background. Culture can be defined as the shared attitudes, beliefs, norms, and behaviours of a group that are communicated from one generation to the next. They ensure the survival of the group. Our culture helps us understand life and influences the decisions that we make.

In this learning activity, you are to reflect on your own culture or about a culture with which you are very familiar. Think about the following:

■ traditions

■ rules

■ standards of acceptable behaviour

■ ways of celebrating important events

■ ways of interacting with others

■ rules involving gender roles

■ rites of passage

■ food

■ clothing

■ houses

■ technology used or not used

■ mode of transportation

■ activities in which one participates

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

M O D U L E   5

Learning Activity Answer Key

Learning Activity 5.1: Psychological Behaviours

Consider the following scenarios. For each, indicate if it should be considered a psychological disorder. Use the criteria of maladaptive, unjustifiable, disturbing, and atypical to help with your decision. Use the chart provided after the scenarios to record your answers.

1. In December of 1999, John was convinced that massive computer malfunctions (caused by Y2K incompatibility) would mean the end of the world. He stockpiled supplies of canned food, bottled water, gasoline, and propane. He also bought a generator. He kept the gasoline and propane in tanks in his basement. While not particularly safe, this was the best place he could find to store them.

2. Mark is in Grade 11 and has finally accepted that he has a strong physical attraction to other males. He is afraid to tell his parents and friends because he fears they will be angry with him or lose respect for him. Mark is suffering from a great deal of anxiety because he has to hide his true feelings from the people whom he cares about the most. He is also concerned that his lifestyle choice will prevent him from fulfilling other dreams, such as raising a family and becoming a politician.

3. Nicholas joined the military after high school. He was assigned to serve in a war-torn country. Last week, his battalion was attacked and many soldiers were killed. Nicholas feels that killing is wrong, even in these circumstances, and risked his own life by refusing to fire his weapon. His choice cost some of his peers their lives.

4. Braden is passionate in his belief that animals should not be used in research. He has devoted his life to the cause. Last week, he bombed the administrative office of a pharmaceutical company that is known to perform animal research. Four people were injured in the explosion and one died.

5. Marie has smoked since she was 14 years old. She is now 32 and is unable to quit despite having tried several times. Her most recent attempt to quit occurred eight months ago when she became pregnant with her first child. That only lasted four weeks. Now, at eight months pregnant, she hides her cigarette smoking from her family and friends.

6. Joanna's father died suddenly two weeks ago. She was numb for about a week but now she is overwhelmed by sadness. She has not gone back to school yet because she can't get herself out of bed in the morning. She eats very little and feels scared that she will not be able to cope with future challenges.

7. Marisa claims that she was a warrior princess in a past life. She believes that she can "channel" this previous personality and she makes a living by allowing her "warrior princess" self to channel advice to paying customers.

8. Juanita wears a crystal that was given to her as a child. She believes that with the help of the crystal she can see the auras of other people. Two weeks ago, she lost her crystal. She has since become very anxious. Without the crystal, she claims that she can't concentrate on her work. She is in danger of losing her job.

9. Joachim is afraid of driving or riding in a motor vehicle. When he was 17, his brother was killed in a fatal car collision. He had been the driver of the car and had walked away with only a few minor injuries. Now, at age 27, he still refuses to get into any motor vehicle. Fortunately, he has always been able to function normally because he can easily walk to work. His family also lives within walking distance.

10. Joachim (from the previous scenario) is now 33 and married. His wife is pregnant and insists that Joachim get over his fear of cars. He has tried several times to get over his fear; however, he finds that he is overcome by paralyzing fear as soon as he sets foot into a taxi or car.

Use the following chart to see which criteria are met in each of the scenarios. Place an X if the criteria are met.

- Maladaptive means destructive to oneself or others.
- Unjustifiable means that there is no rational basis.
- Disturbing means that it is troublesome to other people.
- Atypical means that it is so different that it violates societal or cultural rules.

Scenario	Maladaptive	Unjustifiable	Disturbing	Atypical
John		X	X	
Mark	X			
Nicholas	X			X
Braden	X		X	X
Marie	X		X	X
Joanna	X		X	
Marisa		X	X	
Juanita			X	
Joachim at 27			X	
Joachim at 33	X		X	

Learning Activity 5.2: Psychological Disorders

Read each of the following scenarios and identify the possible psychological disorder. Some of the disorders were presented in Lessons 2 and 3.

1. After weeks of feeling dejected, having no energy, and being dissatisfied with his life, Fred has suddenly become ecstatic and energetic. He talks constantly about his far-fetched plans for making huge amounts of money. __**bipolar**__

2. Alayna worries about everything and can never relax. She is very jumpy, has trouble sleeping at night, and has a poor appetite. For the last few months, she has been unable to concentrate at work and is in danger of losing her job. __**generalized anxiety disorder**__

3. Bianca, a nineteen-year-old college student, has missed almost all of her classes this past month. She sleeps fourteen hours a day, has withdrawn from friends and family, feels worthless, and cries for no apparent reason. __**major depressive disorder**__

4. Carl can't bear to be in small enclosed spaces, such as elevators, and goes to great lengths to avoid them. Recently, he turned down a high-paying job with an air conditioning repair company because it involved working in crawl spaces. __**claustrophobia**__

5. Kary believes that others are talking about her and actively plotting against her. She hears voices that tell her to carry a knife in her purse to protect herself. __**paranoid schizophrenia**__

6. Ever since going through a very painful divorce, Kayla has experienced a number of terrifying "spells" that seem to come out of nowhere. Her heart suddenly starts to pound, she begins to sweat and tremble, and she has trouble breathing. __**panic disorder**__

7. For as long as she can remember, Marla has felt negative about life. Although good things occasionally happen in Marla's life, they have little impact on her gloomy mood. She functions adequately but she has few friends because she is so pessimistic. __**dysthymic disorder**__

8. Nancy speaks slowly and in the same tone. She has reduced emotional responsiveness and few expressive gestures. Her speech is limited to brief empty comments. __**catatonic schizophrenia**__

9. Harry disinfects his shoes, clothing, floor, and doorknobs with bleach several times a day. Nevertheless, he is tormented by worries that his apartment may be contaminated by germs from the outside. He doesn't allow anyone to come into his apartment for fear they will contaminate his furniture and belongings. __**obsessive compulsive disorder**__

10. Tyler said to his psychiatrist, "Today is infinity's horseman." He acted surprised that his therapist did not understand what he meant. When a friend told him that he was sad because of a death in the family, Tyler responded by laughing hysterically. __**disorganized schizophrenia**__

11. Jay, a high school teacher in Calgary, disappeared three days after his wife unexpectedly left him for another man. Six months later, he was discovered tending bar in Brandon. Calling himself Martin, he claimed to have no recollection of his past life and insisted that he had never been married. __**dissociative fugue**__

12. Marian and her brother were recently involved in an automobile accident. Marian was not seriously injured but her brother was killed. Marian is unable to recall any details from the time of the accident until four days later. __**dissociative amnesia**__

13. Norma has frequent memory gaps and cannot account for her whereabouts during certain periods of time. After she expressed suicidal thoughts, her husband brought her to the hospital. While being interviewed by a clinical psychologist, she began speaking in a childlike voice. She claimed that her name was Donna and that she was only six years old. Moments later, she seemed to revert to her adult voice and had no recollection of speaking in a childlike voice or claiming that her name was Donna. __**dissociative identity disorder**__

14. Sadie was brought into the hospital emergency room by her family who reported that she experienced a sudden onset of blindness. The family explained that Sadie had just discovered that her husband had been having an affair. She was arguing with her husband when she suddenly announced that she couldn't see. __**conversion disorder**__

15. Thuan, a Vietnamese refugee, can't stop thinking about the horrors he experienced while fleeing his country by boat. He sleeps poorly and is often awakened by terrifying nightmares. __**post-traumatic stress disorder**__

16. Walt has been chronically worried about his health for years. During his last doctor's appointment, his blood pressure was slightly elevated. The doctor suggested that he make an appointment to check it again in a month; nonetheless, he indicated that he did not need medication. Despite the reassurance, Walt became convinced that he had hypertension and began to complain of vague chest pain. __**hypochondriasis**__

Learning Activity 5.3: Cognitive Dissonance

The following situations are examples of behaviours and attitudes that are not consistent with each other. In other words, they are examples of cognitive dissonance. For each one, identify the attitude and the behaviour and describe how to lessen the inconsistency between the two.

1. Teenagers drive over the speed limit even though they know that doing this is dangerous.

   Attitude: **Driving over the speed limit is dangerous.**

   Behaviour: **Drive over the speed limit.**

   Reduce the cognitive dissonance by **either concluding that driving over the speed limit is not dangerous or keeping your speed to the limits that are set.**

2. You hate chemistry class and your teacher has asked you to encourage some younger students to sign up for the class next year. You speak to the younger students.

   Attitude: **You hate chemistry class.**

   Behaviour: **You tell younger students that chemistry is a good class.**

   Reduce the cognitive dissonance by **either believing that chemistry is a good class or not sounding too enthusiastic when you speak to the younger students about signing up for the class.**

3. You buy a used television even though it wasn't quite what you wanted. Two weeks later, you find a new television for the same price that has everything you wanted. You can't return the used television to the person you bought it from.

   Attitude: **You want to buy a television and get the best that you can get for your money.**

   Behaviour: **You buy a television that isn't exactly what you wanted.**

   Reduce the cognitive dissonance by **either thinking that your used television has everything that you wanted or you sell the used television and buy the new one.**

Learning Activity 5.4: Attribution

Read the following scenario and determine the cause of the accident based on attributing the cause to the situation and based on attributing the cause to the person. Finally, determine what fundamental attribution error might occur.

Your friend Miranda just got her driver's license a month ago. Yesterday, Miranda had an accident on the way to school. She hit the car in front of her when she was approaching the stop sign. The road was icy because of the freezing rain. Fortunately, no one was hurt. There was a lot of damage to both cars.

Situation attribution: **The accident is blamed on the road conditions at the time.**

Person attribution: **The accident is blamed on Miranda's lack of driving experience.**

Fundamental attribution error: **Miranda blames the weather conditions for her accident. However, her friends blame the accident on Miranda's lack of experience or on her driving instructor.**

Learning Activity 5.5: Social Psychology in Review

Complete the puzzle.

Down

2. It is the theory according to which we behave in such a manner to reduce the discomfort we feel when our thoughts and behaviours are inconsistent.
4. It is the theory according to which we tend to give an explanation for behaviour by looking at the situation or the person's disposition.
5. It is the enhancement of a group's attitudes through discussion with the group.
6. It is when there is improved performance of tasks in the presence of others.
7. It is the loss of self-awareness and self-restraint occurring in group situations.

Across

1. It is the scientific study of how we think about, influence, and relate to one another.
3. He is a social psychologist who researched obedience to authority.
8. It is the tendency for people who have first agreed to a small request to comply later with a larger request.

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Learning Activity 5.6: The Bystander Effect

Read the following scenarios and apply the bystander effect to each one.

1. Rachel is walking down a busy street on a snowy day. At the side of the street, a woman is crouched down shivering.

   Rachel probably does not offer any assistance because she believes that there are other people around that will help. She may help if she thinks the woman on the street is in critical condition and if the location of this event is familiar to her.

2. Jordan is visiting a college because he hopes to attend classes there next year. As he is walking across the campus, he sees a man lying on the ground. Everyone around him is just walking past the man.

   Jordan probably does not stop to help because he is unfamiliar with the campus and he sees that no one else has stopped to help. He might help if he believed that the man on the ground was in critical condition.

3. Eliza is driving home late at night on an unfamiliar road when she sees a man standing by a car flagging her down.

   Eliza will probably not stop to help because no one else has stopped and she is unfamiliar with the road. She may help if she believes that the man is seriously injured.

Learning Activity 5.7: Prejudicial Biases

Many of us deny that we have any prejudicial biases; however, this general kind of statement is just not true. Because our brains detect patterns in what we experience, we are able to generate prejudicial conclusions based on very little information. A negative experience with even one representative of a group can change how we think about that group.

Look at the following groups and rate your prejudice toward them.

Police officers

very negative   neutral   very positive

←——————————————————————————→

Cheerleaders

very negative   neutral   very positive

←——————————————————————————→

Convicted pedophiles

very negative   neutral   very positive

←——————————————————————————————→

High school vice principals

very negative   neutral   very positive

←——————————————————————————————→

Blondes

very negative   neutral   very positive

←——————————————————————————————→

Men who wear toupees

very negative   neutral   very positive

←——————————————————————————————→

Hunters

very negative   neutral   very positive

←——————————————————————————————→

AIDS patients

very negative   neutral   very positive

←——————————————————————————————→

Obese people

very negative   neutral   very positive

←——————————————————————————————→

People of a different race than you

very negative   neutral   very positive

←——————————————————————————————→

People with a different religious background than you

very negative   neutral   very positive

←——————————————————————————————→

Do you notice any kind of pattern? When we have prejudicial attitudes toward others and then act on these feelings, we discriminate. The verbal or physical behaviour is called aggression.

There is no answer key for this learning activity as you are to apply information covered in this lesson to a particular scenario.

Learning Activity 5.8: Defining your Culture

We all have a cultural background. Culture can be defined as the shared attitudes, beliefs, norms, and behaviours of a group that are communicated from one generation to the next. They ensure the survival of the group. Our culture helps us understand life and influences the decisions that we make.

In this learning activity, you are to reflect on your own culture or about a culture with which you are very familiar. Think about the following:

■ traditions

■ rules

■ standards of acceptable behaviour

■ ways of celebrating important events

■ ways of interacting with others

■ rules involving gender roles

■ rites of passage

■ food

■ clothing

■ houses

■ technology used or not used

■ mode of transportation

■ activities in which one participates

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GRADE 12 PSYCHOLOGY

Final Practice Examination

Name: _____

Student Number: _____

Attending ❑   Non-Attending ❑

Phone Number: _____

Address: _____

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For Marker's Use Only

Date: _____

Final Mark _____/100 = _____%

Comments:

Instructions

The final examination will be weighted as follows:

- Modules 4 and 5: 100%

The format of the final examination will be as follows:

- Part 1: Matching Definitions and Famous Psychologists
  (30 questions, 0.5 mark each)
- Part 2: Multiple-Choice Questions (35 questions, 1 mark each)
- Part 3: Short-Answer Questions (choose 4 out of 5 questions, 5 marks each)
- Part 4: Long-Answer Questions (choose 3 out of 4 questions, 10 marks each)

The following practice final examination contains a sample of the types of questions you will find on the final examination.

Part 1: Matching Definitions and Famous Psychologists
(30 x 0.5 mark = 15 marks)

On the final examination, there are 30 questions each worth 0.5 mark to a total of 15 marks. Below is a sample of the types of terms you are responsible for learning.

Match the terms or names of the psychologists on the left with the correct description on the right. Place the corresponding number on the line next to the term or name.

—— bystander effect

1. It is the awareness of yourself and your environment.

—— concept

2. It is the ability to reason quickly and abstractly.

—— consciousness

3. It is the scientific study of behaviour and mental processes.

—— culture

4. These behaviours are different than those of other people in your culture.

—— depressant

5. It lowers the overall level of activity in the nervous system.

—— deviant

6. It is the tendency for people in a group to exert less effect than if they are alone.

—— extinction

7. These are the shared attitudes, beliefs, norms, and behaviours of a group.

—— fluid intelligence

8. This is a mental grouping based on shared similarity.

—— maladaptive

9. This is learning that we retain over time

—— memory

10. This is the tendency for a person to be less likely to provide help if other people are present.

—— observational learning

11. This is behaviour that is destructive to oneself or others.

—— psychoanalysis

12. According to this, disorders are the result of unconscious motives and conflicts.

—— psychology

13. This is the loss of a behaviour when no consequence follows it.

—— social loafing

14. This terms refers to having a physical problem with no physical cause.

—— somatoform disorder

15. This is learning that takes place by watching others.

Name: _____

Part 2: Multiple-Choice Questions *(35 x 1 mark = 35 marks)*

On the final examination, there are 35 multiple-choice questions each worth 1 mark to a total of 35 marks. Below is a sample of ten multiple-choice questions.

Circle the letter beside the best answer for each multiple-choice question.

1. To be diagnosed as a psychological disorder, a behaviour must be…
   b. deviant, maladaptive, unjustifiable, and atypical
   c. distressful, maladaptive, unjustifiable, and atypical
   d. disturbing, maladaptive, unjustifiable, and atypical
   e. dysfunctional, maladaptive, unjustifiable, and atypical

2. Your dog comes running when it hears the electric can opener. This is an example of…
   a. operant conditioning
   b. classical conditioning
   c. observational learning
   d. stimulus conditioning

3. You learn that one of your neighbour's children plays hockey. You assume it is their son, not their daughter. This is an example of what type of problem solving?
   a. algorithm
   b. trial and error
   c. insight
   d. heuristic

4. The theory according to which we tend to provide an explanation for behaviour by looking at the situation or the person's disposition is the…
   a. cognitive dissonance theory
   b. attribution theory
   c. social cognition theory
   d. social influence theory

5. Companionate love is best described as…
   a. intimacy
   b. intimacy and passion
   c. passion and decision/commitment
   d. intimacy and decision/commitment

6. Poets and authors often possess this type of intelligence.
   a. interpersonal
   b. intrapersonal
   c. bodily-kinesthetic
   d. visual-spatial

7. Disruptive and irrational fears of objects or situations most likely indicate a(n)…
   a. obsessive-compulsive disorder
   b. phobia
   c. post-traumatic stress disorder
   d. generalized anxiety disorder

8. Caffeine, energy drinks, and nicotine do all of the following except…
   a. increase alertness and activity
   b. sometimes cause anxiety or panic states accompanied by hyperventilation and light-headedness
   c. mimic the function of the adrenal cortex in the brain that secretes adrenaline or epinephrine into the bloodstream
   d. cause muscle weakness

9. A loss of productive behaviour patterns is known as a…
   a. dissociative disorder
   b. somatoform disorder
   c. schizophrenia disorder
   d. personality disorder

10. A sleep disturbance characterized by snoring, short silences, and gasps is called…
    a. sleep apnea
    b. narcolepsy
    c. somnambulism
    d. insomnia

Name: _____

Part 3: Short-Answer Questions *(4 x 5 marks = 20 marks)*

On the final examination, you will be asked to answer **4 of the 5** short-answer questions presented, each worth 5 marks to a total of 20 marks. Below is an example of a short-answer question.

1. There are four theories on why we need to sleep. In the space provided, explain the four theories *(4 marks)* and then provide two possible effects of sleep deprivation *(0.5 mark each)*.

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Name: _____

Part 4: Long-Answer Questions *(3 x 10 marks = 30 marks)*

On the final examination, you will be asked to answer **3 of the 4** long-answer questions presented, each worth 10 marks to a total of 30 marks. Below is an example of a long-answer question.

1. According to the DSM-IV-TR, psychological disorders are grouped into categories based on their symptoms. For each category, name one specific disorder that falls into that category *(0.5 mark each)*. Follow this up by naming and explaining two different treatment options that are available from a qualified therapist for each specific disorder that you chose *(1 mark each to a total of 2 marks per category)*.

Category: **Anxiety Disorders**

Specific Disorder:

_____

Treatment Option 1 and Explanation:

_____

_____

_____

_____

_____

_____

Treatment Option 2 and Explanation:

_____

_____

_____

_____

_____

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Category: **Mood Disorders**

Specific Disorder:

_____

Treatment Option 1 and Explanation:

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_____

Treatment Option 2 and Explanation:

_____

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_____

Name: _____

Category: **Schizophrenia Disorders**

Specific Disorder:

_____

Treatment Option 1 and Explanation:

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Treatment Option 2 and Explanation:

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Category: **Personality Disorders**

Specific Disorder:

_____

Treatment Option 1 and Explanation:

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Treatment Option 2 and Explanation:

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GRADE 12 PSYCHOLOGY

Final Practice Examination
Answer Key

Name: _____

Student Number: _____

Attending ❏   Non-Attending ❏

Phone Number: _____

Address: _____

_____

_____

For Marker's Use Only

Date: _____

Final Mark: _____ /100 = _____ %

Comments:

Instructions

The final examination will be weighted as follows:

■ Modules 4 and 5: 100%

The format of the final examination will be as follows:

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■ Part 2: Multiple-Choice Questions (35 questions, 1 mark each)
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■ Part 4: Long-Answer Questions (choose 3 out of 4 questions, 10 marks each)

**The following practice final examination contains a sample of the
types of questions you will find on the final examination.**

Part 1: Matching Definitions and Famous Psychologists
(30 x 0.5 mark = 15 marks)

On the final examination, there are 30 questions each worth 0.5 mark to a total of 15 marks. Below is a sample of the types of terms you are responsible for learning.

Match the terms or names of the psychologists on the left with the correct description on the right. Place the corresponding number on the line next to the term or name.

10	bystander effect (Module 5, Lesson 6)	1. It is the awareness of yourself and your environment.
8	concept (Module 4, Lesson 5)	2. It is the ability to reason quickly and abstractly.
1	consciousness (Module 4, Lesson 6)	3. It is the scientific study of behaviour and mental processes.
7	culture (Module 5, Lesson 7)	4. These behaviours are different than those of other people in your culture.
5	depressant (Module 4, Lesson 8)	5. It lowers the overall level of activity in the nervous system.
4	deviant (Module 5, Lesson 1)	6. It is the tendency for people in a group to exert less effect than if they are alone.
13	extinction (Module 4, Lesson 2)	7. These are the shared attitudes, beliefs, norms, and behaviours of a group.
2	fluid intelligence (Module 4, Lesson 9)	8. This is a mental grouping based on shared similarity.
11	maladaptive (Module 5, Lesson 2)	9. This is learning that we retain over time
9	memory (Module 4, Lesson 4)	10. This is the tendency for a person to be less likely to provide help if other people are present.
15	observational learning (Module 4, Lesson 3)	11. This is behaviour that is destructive to oneself or others.
12	psychoanalysis (Module 5, Lesson 4)	12. According to this, disorders are the result of unconscious motives and conflicts.
3	psychology (Module 1, Lesson 2)	13. This is the loss of a behaviour when no consequence follows it.
6	social loafing (Module 5, Lesson 5)	14. This terms refers to having a physical problem with no physical cause.
14	somatoform disorder (Module 5, Lesson 3)	15. This is learning that takes place by watching others.

Part 2: Multiple-Choice Questions *(35 x 1 mark = 35 marks)*

On the final examination, there are 35 multiple-choice questions each worth 1 mark to a total of 35 marks. Below is a sample of ten multiple-choice questions.

Circle the letter beside the best answer for each multiple-choice question.

1. To be diagnosed as a psychological disorder, a behaviour must be…
   (Module 5, Lesson 1)
   b. deviant, maladaptive, unjustifiable, and atypical
   c. distressful, maladaptive, unjustifiable, and atypical
   d. disturbing, maladaptive, unjustifiable, and atypical
   e. dysfunctional, maladaptive, unjustifiable, and atypical

2. Your dog comes running when it hears the electric can opener. This is an example of… (Module 4, Lesson 1)
   a. operant conditioning
   b. classical conditioning
   c. observational learning
   d. stimulus conditioning

3. You learn that one of your neighbour's children plays hockey. You assume it is their son, not their daughter. This is an example of what type of problem solving? (Module 4, Lesson 5)
   a. algorithm
   b. trial and error
   c. insight
   d. heuristic

4. The theory according to which we tend to provide an explanation for behaviour by looking at the situation or the person's disposition is the… (Module 5, Lesson 5)
   a. cognitive dissonance theory
   b. attribution theory
   c. social cognition theory
   d. social influence theory

5. Companionate love is best described as… (Module 5, Lesson 6)
   a. intimacy
   b. intimacy and passion
   c. passion and decision/commitment
   d. intimacy and decision/commitment

6. Poets and authors often possess this type of intelligence. (Module 4, Lesson 9)
   a. interpersonal
   b. intrapersonal
   c. bodily-kinesthetic
   d. visual-spatial

7. Disruptive and irrational fears of objects or situations most likely indicate a(n)… (Module 5, Lesson 2)
   a. obsessive-compulsive disorder
   b. phobia
   c. post-traumatic stress disorder
   d. generalized anxiety disorder

8. Caffeine, energy drinks, and nicotine do all of the following except… (Module 4, Lesson 8)
   a. increase alertness and activity
   b. sometimes cause anxiety or panic states accompanied by hyperventilation and light-headedness
   c. mimic the function of the adrenal cortex in the brain that secretes adrenaline or epinephrine into the bloodstream
   d. cause muscle weakness

9. A loss of productive behaviour patterns is known as a… (Module 5, Lesson 3)
   a. dissociative disorder
   b. somatoform disorder
   c. schizophrenia disorder
   d. personality disorder

10. A sleep disturbance characterized by snoring, short silences, and gasps is called… (Module 4, Lesson 6)
    a. sleep apnea
    b. narcolepsy
    c. somnambulism
    d. insomnia

Name: _____

Part 3: Short-Answer Questions *(4 x 5 marks = 20 marks)*

On the final examination, you will be asked to answer **4 of the 5** short-answer questions presented, each worth 5 marks to a total of 20 marks. Below is an example of a short-answer question.

1. There are four theories on why we need to sleep. In the space provided, explain the four theories *(4 marks)* and then provide two possible effects of sleep deprivation *(0.5 mark each).* (Module 4, Lesson 6)

    a. **Sleep protects**

    When we are asleep, we are out of harm's way: we are protected from the danger of predators. Animals that have the least need to hide or be protected from predators sleep less than other animals that need to be protected from predators.

    b. **Sleep helps us recover**

    When we are asleep, our brain tissue is restored and repaired. Our neurons have time to repair themselves.

    c. **Sleep helps us remember**

    When we are sleep we restore and rebuild the memories of our day's experiences. It helps us in the creative process as well. If we have a problem that we can't solve, a solution sometimes comes to us when we "sleep on it".

    d. **Sleep may play a role in the growth process**

    When we are asleep, our pituitary gland releases a growth hormone. This is why we sleep more during growth spurts and we tend to sleep less as we age.

    Lack of sleep
    — **decreases the levels of hormones that are necessary for your immune system to function properly**
    — **increases the level of cortisol, a stress hormone, which is responsible for learning and memory**
    — **increases the number of car accidents because people fall asleep at the wheel (even one hour when time change happens) affects the number of accidents**
    — **has an effect on concentration and irritability**
    — **has an effect on cancer-fighting immune cells**
    — **has an effect on premature aging**

Part 4: Long-Answer Questions *(3 x 10 marks = 30 marks)*

On the final examination, you will be asked to answer **3 of the 4** long-answer questions presented, each worth 10 marks to a total of 30 marks. Below is an example of a long-answer question.

1. According to the DSM-IV-TR, psychological disorders are grouped into categories based on their symptoms. For each category, name one specific disorder that falls into that category *(0.5 mark each)*. Follow this up by naming and explaining two different treatment options that are available from a qualified therapist for each specific disorder that you chose *(1 mark each to a total of 2 marks per category)*.
(Module 5, Lessons 2 and 3)

   Category: **Anxiety Disorders**

   Specific Disorder:

   There are five possible answers:
   a. **generalized anxiety disorder**
   b. **panic disorder**
   c. **phobia**
   d. **obsessive-compulsive disorder**
   e. **post-traumatic stress disorder**

   Treatment Options and Explanation:

   Systematic desensitization/virtual reality exposure therapy
   a. **A client learns to associate a pleasant, relaxed state with gradually increasing, anxiety-stimulating stimuli. It is used to treat phobias.**
   b. **VRT produces vivid experiences to assist in overcoming fears and phobias.**

   Cognitive (behavioural) therapy
   a. **It teaches people to think in positive ways to get rid of harmful, negative thoughts.**
   b. **It makes the person aware of their irrational, negative thinking and helps them replace it with new ways of thinking and behaving.**

   Anti-anxiety drugs
   a. **They increase the level of the neurotransmitter GABA which reduces anxiety that is associated with stressful situations.**

Name: _____

Category: **Mood Disorders**

Specific Disorder:

There are two possible answers:

a. **major depressive disorder**

b. **bipolar disorder**

Treatment Options and Explanation:

Antidepressant drugs

a. **The neurotransmitters serotonin and norepinephrine are lacking during depression.**

Psychoanalysis

a. **Social-cognitive factors such as learned helplessness and attributions play a role in maintaining the cycle of a stressful event creating a hopeless, depressed state and self-focus.**

Cognitive (behaviour) therapy

a. **It teaches people to think in positive ways to get rid of harmful, negative thoughts.**

b. **It makes the person aware of their irrational, negative thinking and helps them replace it with new ways of thinking and behaving.**

Humanistic approach

a. **This client-centered therapy stresses empathy, acceptance, and non-judgmental understanding.**

Category: **Schizophrenia Disorders**

Specific Disorder:

Schizophrenia is not one disorder, but a group of disorders where the person suffers from

a. **delusions**

b. **hallucinations**

c. **inappropriate emotions or behaviours**

There are four types:

a. **disorganized schizophrenia**

b. **paranoid schizophrenia**

c. **catatonic schizophrenia**

d. **undifferentiated schizophrenia**

Treatment Options and Explanation:

The person has high levels of dopamine (which explain the delusions and hallucinations).

Family therapy

a. **A genetic predisposition turns into a reality if certain triggers are present (e.g., stress and disturbed patterns of family communications). Families are guided to more positive relationships and better communication.**

Anti-anxiety drugs

a. **They increase the level of the neurotransmitter GABA which reduces anxiety that is associated with stressful situations.**

Cognitive (behaviour) therapy

a. **It teaches people to think in positive ways to get rid of harmful, negative thoughts.**

b. **It makes the person aware of their irrational, negative thinking and helps them replace it with new ways of thinking and behaving.**

Humanistic approach

a. **It is a client-centered therapy that stresses empathy, acceptance, and non-judgmental understanding.**

Category: **Personality Disorders**

Specific Disorder:

There are 10 different personality disorders divided into three clusters:

a. **personality disorders related to anxiety (avoidant/dependent)**

b. **personality disorders with odd or eccentric behaviours (paranoid/schizoid)**

c. **personality disorders with dramatic or impulsive behaviours (anti-social)**

Treatment Options and Explanation:

Genetics may play a role as well as a predisposition to low levels of autonomic system arousal.

Psychoanalysis

a. **Social-cognitive factors such as learned helplessness and attributions play a role in maintaining the cycle of a stressful event creating a hopeless, depressed state and self-focus**

Humanistic approach

a. **A client-centered therapy stresses empathy, acceptance, and non-judgmental understanding.**

Cognitive (behaviour) therapy

a. **It teaches people to think in positive ways to get rid of harmful, negative thoughts.**

b. **It makes the person aware of their irrational, negative thinking and helps them replace it with new ways of thinking and behaving.**

Systematic desensitization

a. **A client learns to associate a pleasant, relaxed state with gradually increasing, anxiety-stimulating stimuli.**

Anti-anxiety drugs

a. **They increase the level of the neurotransmitter GABA which reduces anxiety that is associated with stressful situations.**