‘Consult Private Sector on Curriculum’

Kuala Lumpur, Sat-The Prime Minister Datuk Seri Abdullah Ahmad Badawi said after opening the two-day Malay Education Congress today that consultation to get views of the private sector should be for Sijil Pelajaran Malaysia-level and onwards (Year 11 onwards). This approach is important because of the rapid and dynamic industrial development taking shape. We cannot run away from supplying a workforce needed by industries for nation building”, Abdullah said after opening the two-day Malay Education Congress today.

The curriculum must see that those entering the work market after completing their secondary education, diploma or degree courses are equipped with knowledge that is useful to the nature of their jobs, he added.

Kuala Lumpur, Sat-The Prime Minister wants education officials to consult the private sector when drawing curriculum for secondary and tertiary level education to produce the right people for the job market. Datuk Seri Abdullah Ahmad Badawi said that private sector’s manpower needs and future trends would allow adjustments to be made to the current curriculum.

The curriculum must see that those entering the work market after completing their secondary education, diploma or degree courses are equipped with knowledge that is useful to the nature of their jobs, he added.

**EARNING OUTCOMES**

When you complete this module you will be able to:

- Define what is philosophy
- Define what is educational philosophy
- Explain the influence of the four educational philosophies on curriculum
- Explain why curriculum developers need to understand how humans learn
- Compare the four major theoretical perspectives explaining human learning
- Identify the application of behaviourist, cognitivist, constructivist and humanist principles in the classroom
- State your values and beliefs about the nature of learning

**Discussion Questions**

**Readings**
2.0 Philosophical Foundations of Curriculum

In module 1, we discussed the different definitions of curriculum. We also briefly discussed the foundations of curriculum, the curriculum development process and the relationship between curriculum and instruction. In this module and the following module, we will examine in greater detail the foundations of curriculum. In other words, how different traditional disciplines have influenced curriculum. A curriculum is developed based on certain beliefs and orientations, conceptions of learning and the demands of society. In this chapter, we will focus on the philosophical and psychological beliefs that influence curriculum and impact curriculum. In Module 3 we will discuss the role of society in determining what is to be included in a curriculum as well as the legacy of significant historical events.

ACTIVITY 2.1

Read the newspaper report on ‘Consult Private Sector on Curriculum’

1. What do you understand by the phrase “equipped with knowledge that is useful to the nature of their jobs”? Give specific examples

2. “We cannot run away from supplying a workforce needed by industries for nation building”. To what extent do you agree that this should be the role and functions of schools and universities?

2.1 What is Philosophy?
word philosophy is a combination of the Greek word “philos” (love) and “sophia” (wisdom) which translated means “love of wisdom”. Philosophers are people who seek after wisdom and curious about the world seeking to understand the nature of things. Oftentimes, the result of philosophy is not so much putting forward new philosophies or propositions but making existing philosophies or propositions clearer. Philosophers study the works of other philosophers and state anew what others have put forward as well as proposing new philosophies. A philosopher can be a person who knows philosophy even though he or she engages in little or no philosophising. Philosophy also refers to the collective works of other philosophers. It can mean the academic exploration of various questions raised by philosophers.

For centuries philosophers have been interested with such concepts as morality, goodness, knowledge, truth, beauty and our very existence. Among the questions philosophers ask are:

- What is truth? Why do we say a statement is correct or false?
- How do we know what we know?
- What is reality? What things can be describe as real?
- What is the nature of thought and thinking?
- What is special about being a human being?
- Is there anything special about being alive at all?
- What is ethics?
- What does it mean when something is right or wrong; good or bad?
- What is beauty?
- How do beautiful things differ from others?

Philosophers use certain methods of inquiry. They often frame their questions as problems or puzzles about subjects they find interesting and confusing. Popularly, the word philosophy may also refer to someone’s perspective on life (philosophy of life) or the underlying principles or method of achieving something.

### 2.2 Philosophy of Education

Now, let’s examine a branch of philosophy, namely; philosophy of education. What is philosophy of education? Philosophy of education is the study of questions such as ‘What is education?’ ‘What is the purpose of education?’, ‘What does it mean to know something?’ ‘What is the relationship between education and society?’ The philosophy of education recognises that the development of a civil society depends on the education of the young as responsible, thoughtful and enterprising citizens which is a challenging task requiring deep understanding of ethical principles, moral values, political theory, aesthetics and economics; not to mention an understanding of children themselves.

Most of the prominent philosophers in the last 2000 years were not philosophers of education but have at some point considered and written on the philosophy of
education. Among them are Plato, Aristotle, Rousseau, Dewey, Adler, Confucius, Al Farabi, Tagore and many others [we will discuss their contributions to education later in the chapter]. These philosophers have been key voices in philosophy of education and have contributed to our basic understanding of what education is and can be. They have also provided powerful critical perspectives revealing the problems in education.

What is the connection between philosophy and curriculum? For example, when you propose the teaching of a particular body of knowledge, course or subject, you will be asked, “What is your philosophy for introducing that content?” If you are unable to answer the question, you may not be able to convince others to accept your proposal. Philosophy is the starting point in any curriculum decision making and is the basis for all subsequent decisions regarding curriculum. Philosophy becomes the criteria for determining the aims, selection, organisation and implementation of the curriculum in the classroom.

Philosophy helps us answer general questions such as: ‘What are schools for?’ ‘What subjects are of value?’ ‘How should students learn the content?’ It also helps us to answer more precise tasks such as deciding what textbooks to use, how to use them, what homework to assign and how much of it, how to test and use the results.

SELF-TEST 2.1

What do philosophers?
List the concepts philosophers have been interested in.
What is philosophy of education? How is it related to the curriculum of a school system?

“In modern times there are opposing views about the practice of education. There is no general agreement about what the young should learn either in relation to virtue or in relation to the best life; nor is it clear whether their education ought to be directed more towards the intellect than towards the character of the soul. And it is not certain whether training should be directed at things useful in life, or at those conducive to virtue, or at non-essentials. And there is no agreement as to what in fact does tend towards virtue. Men do not all prize most highly the same virtue. So naturally they differ also about the proper training for it.”

Would you believe that the above statement was written more that 2000 years ago by the Greek philosopher Aristotle and we are still debating the same issues today.
Sometimes one wonders whether we know what we want! We lament about the poor level of basic skills of students and call for a return to the basics. At the same time we want students to develop critical thinking skills and call for lesser emphasis on rote learning. Through the centuries, many philosophies of education have emerged, each with their own beliefs about education. In this chapter, we will discuss four philosophies, namely; perennialism, essentialism, progressivism and reconstructionism proposed by Western philosophers. Also, discussed are the viewpoints of three Eastern philosophers; namely, al-Farabi, Tagore and Confucius. Each of these educational philosophies is examined to see what curriculum is proposed and how teaching and learning should be conducted.

2.4 Perennialism

2.4.1 What is Perennialism?

Perennialism, the oldest and most conservative educational philosophy has its roots in the philosophy of Plato and Aristotle. Two modern day proponents of perennialism are Robert Hutchins and Mortimer Adler. The perennialists believed that humans are rational and the aim of education is “to improve man as man” (Hutchins, 1953). The answers to all educational questions derive from the answer to one question: What is human nature? According to them, human nature is constant and humans have the ability to understand the universal truths of nature. Thus, the aim of education is to develop the rational person and to uncover universal truths by training the intellect. Towards developing one’s moral and spiritual being, character education should be emphasised.

Perennialism is based on the belief that some ideas have lasted over centuries and are as relevant today as when they were first conceived. These ideas should be studied in school. A list of the ‘Great Books’ was proposed covering topics in literature, art, psychology, philosophy, mathematics, science, economics, politics and so forth. Examples of such books are: Robinson Crusoe written by Daniel Defoe, War and Peace written by Leo Tolstoy, Moby Dick written by Herman Melville, Euclid’s book Elements on geometry, Newton’s book on Optics, The Sexual Enlightenment of Children written by Sigmund Freud, An inquiry into the Nature and Causes of the Wealth of Nations by Adam Smith and many others. The book selected had to have contemporary significance, that is, it should be relevant to the problems and issues of present times. The book should espouse ideas and issues that have occupied the minds of thinking individuals in the last 2000 years. The book should attract people to read it again and again and benefit from it.

The perennialists believed that these are history's finest thinkers and writers. Their ideas are profound and meaningful even today as when they were written. When students
are immersed in the study of these profound and enduring ideas, they will appreciate learning for its own sake as well as develop their intellectual powers and moral qualities.

2.4.2 The Perennialist Curriculum

Based on the beliefs of perennialism, the curriculum proposed had the following characteristics:

- The ‘Great Books’ programme or more commonly called the liberal arts will discipline the mind and cultivate the intellect. To read the book in its original language, students must learn Latin and Greek. Students also had to learn grammar, rhetoric, logic, advanced mathematics and philosophy (Hutchins, 1936).

- The study of philosophy is a crucial part of the perennialist curriculum. This was because they wanted students to discover those ideas that are most insightful and timeless in understanding the human condition.

- At a much later time, Mortimer Adler (1982) in his book the Paideia Proposal, recommended a single elementary and secondary curriculum for all students. The educationally disadvantaged had to spend some time in pre-schools.

- Perennialists were not keen on allowing students to take electives (except second languages) such as vocational and life-adjustment subjects. They argued that these subjects denied students the opportunity to fully develop their rational powers.

- The perennialists criticised the vast amount of disjointed factual information that educators have required students to absorb. They urge that teachers should spend more time teaching concepts and explaining how these concepts are meaningful to students.

- Since, enormous amount of scientific knowledge has been produced, teaching should focus on the processes by which scientific truths have been discovered. However, the perennialists advise that students should not be taught information that may soon be obsolete or found to be incorrect because of future scientific and technological findings.

- At the secondary and university level, perennialists were against reliance on textbooks and lectures in communicating ideas. Emphasis should be on teacher-guided seminars, where students and teachers engage in dialogue; and mutual inquiry sessions to enhance understanding of the great ideas and concepts that have stood the test to time. Student should learns to learn, and not to be evaluated
Universities should not only prepare students for specific careers but to pursue knowledge for its own sake. “University students may learn a few trees, perennialists claim, but many will be quite ignorant about the forests: the timeless philosophical questions “ (Hutchins, 1936)

Reasoning using the ‘Great Books’ of Western writers is advocated using the Socratic method to discipline the minds of students. Emphasis should be on scientific reasoning rather than mere acquisition of facts. Teach science but not technology, great ideas rather than vocational topics.

Perennialists argue that the topics of the great books describe any society, at any time, and thus the books are appropriate for American society. Students must learn to recognize controversy and disagreement in these books because they reflect real disagreements between persons. Students must think about the disagreements and reach a reasoned, defensible conclusion.

School should teach religious values or ethics. The difference between right and wrong should be emphasized so that students will have definite rules that they must follow.

ACTIVITY 2.2

The Great Books

The Great Books refer to a curriculum and a book list that came about as the result of a discussion among American academics and educators, starting in the 1920s and 1930s. It was initiated by John Erskine on how to improve higher education by returning to the western liberal arts tradition of broad cross-disciplinary learning. Notable among the academics and educators was Robert Hutchins and Mortimer Adler.

They felt that the emphasis on narrow specialization in American universities and colleges had harmed the quality of higher education by failing to expose students to the important products of Western civilization and thought.

The Great Books started out as a list of 100 essential texts which were selected based on the criteria that it had relevance to present problems and issues and it is relevant to a large number of the great ideas and great issues that have occupied the minds of thinking individuals.

The Great Books covered topics including fiction, history, poetry, natural science, mathematics, philosophy, drama, politics, religion, economics and ethics. Examples of the books are:

- Homer’s The Iliad and The Odyssey
- Works of Aristotle and Plato
- Archimedes Measurement of a circle, On Spirals, Treating Mechanical Problems
- Chaucer’s Canterbury Tales
- Shakespeare’s complete works
- Descartes The Geometry
- Isaac Newton’s Mathematical Principles of Natural Philosophy
- Karl Marx’s Das Kapital
- Leo Tolstoy’s War and Peace
- William James’ The Principle of Psychology

The Great Books was criticized as being elitist and giving importance to ‘dead white males’, while ignoring the contributions of females and minorities (such as Afro-Americans). Another harmful criticism was that the books were more to create the illusion of being cultured without any real substance behind it.

[Source: Great Books of the Western World. www.answers.com]

What other books of The Great Books do you know?
What were the main arguments put forward by the perennialists for using The Great Books?
Do you agree with the criticisms of The Great Books?
2.5 Essentialism

2.5.1 What is Essentialism?

Essentialism comes from the word ‘essential’ which means the main things or the basics. As an educational philosophy, it advocates instilling in students with the "essentials" or “basics” of academic knowledge and character development. The term essentialism as an educational philosophy was originally popularised in the 1930s by William Bagley and later in the 1950s by Arthur Bestor and Admiral Rickover. When it was first introduced as an educational philosophy in American schools, it was criticised as being too rigid. In 1957, the Russians launched Sputnik which caused a panic in educational circles as Americans felt they had fallen behind the Soviet Union technologically. A rethinking of education followed that led to interest in essentialism.

Essentialism was grounded in a conservative philosophy that argues that schools should not try to radically reshape society. Rather, they should transmit traditional moral values and intellectual knowledge that students need to become model citizens. Essentialists believe that teachers should instill traditional virtues such as respect for
authority, fidelity to duty, consideration for others and practicality. Essentialism placed importance on science and understanding the world through scientific experimentation. To convey important knowledge about the world, essentialist educators emphasised instruction in natural science rather than non-scientific disciplines such as philosophy or comparative religion.

2.5.2 The Essentialist Curriculum

Based on the beliefs of essentialism, the curriculum proposed has the following characteristics:

• The ‘basics’ of the essentialist curriculum are mathematics, natural science, history, foreign language, and literature. Essentialists disapprove of vocational, life-adjustment, or other courses with "watered down" academic content.

• Elementary students receive instruction in skills such as writing, reading, and measurement. Even while learning art and music (subjects most often associated with the development of creativity) students are required to master a body of information and basic techniques, gradually moving from less to more complex skills and detailed knowledge. Only by mastering the required material for their grade level are students promoted to the next higher grade.

• Essentialist programs are academically rigorous, for both slow and fast learners. Common subjects for all students regardless of abilities and interests. But, how much is to be learned is adjusted according to student ability.

• It advocates a longer school day, a longer academic year, and more challenging textbooks. Essentialists maintain that classrooms should be oriented around the teacher, who serves as the intellectual and moral role model for students.

• Teaching is teacher-centred and teachers decide what is most important for students to learn with little emphasis on student interests because it will divert time and attention from learning the academic subjects. Essentialist teachers focus heavily on achievement test scores as a means of evaluating progress.

• In an essentialist classroom, students are taught to be "culturally literate," that is, to possess a working knowledge about the people, events, ideas, and institutions that have shaped society. Essentialists hope that when students leave school, they will possess not only basic skills and extensive knowledge, but also disciplined and practical minds, capable of applying their knowledge in real world settings.
• Discipline is necessary for systematic learning in a school situation. Students learn to respect authority in both school and society.

• Teachers need to be mature and well educated, who know their subjects well and can transmit their knowledge to students.

2.6 Progressivism

2.6.1 What is Progressivism?

Progressivism is a philosophical belief that argues that education must be based on the fact that humans are by nature social and learn best in real-life activities with other people. The person most responsible for progressivism was John Dewey (1859-1952). The progressive movement stimulated American schools to broaden their curriculum, making education more relevant to the needs and interests of students. Dewey wrote extensively on psychology, epistemology (the origin of knowledge), ethics and democracy. But, his philosophy of education laid the foundation for progressivism. In 1896, while a professor at the University of Chicago, Dewey founded the famous Laboratory School to test his educational ideas. His writings and work with the Laboratory School set the stage for the progressive education movement.

According to Dewey, the role of education is to transmit society’s identity by preparing young people for adult life. He was a keen advocate of democracy and for it to flourish, he felt that education should allow learners to realise their interests and potential. Learners should learn to work with others because learning in isolation separates the mind from action. According to him certain abilities and skills can only be learned in a group. Social and intellectual interaction dissolves the artificial barriers of race and class by encouraging communication between various social groups (Dewey, 1920). He described education as a process of growth and experimentation in which thought and reason are applied to the solution of problems. Children should learn as if they were scientists using the scientific method proposed by Dewey (1920):

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<tr>
<th>SELF-TEST 2.3</th>
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<tbody>
<tr>
<td>1. What are THREE main features of the essentialist classroom?</td>
</tr>
<tr>
<td>2. Identify the strengths and weaknesses of an essentialist curriculum?</td>
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</tbody>
</table>
1. To be aware of the problem (eg. plants need sunlight to grow)
2. Define the problem (eg. can plants grow without sunlight)
3. Propose hypotheses to solve it
4. Test the hypotheses
5. Evaluate the best solution to the problem

Students should be constantly experimenting and solving problems; reconstructing their experiences and creating new knowledge using the proposed five steps. Teachers should not only emphasise drill and practice, but should expose learners to activities that relate to the real life situations of students, emphasising ‘Learning by doing’.

2.6.2 The Progressive Curriculum

• Progressivists emphasise the study of the natural and social sciences. Teacher should introduce students to new scientific, technological, and social developments. To expand the personal experience of learners, learning should be related to present community life. Believing that people learn best from what they consider most relevant to their lives, the curriculum should centre on the experiences, interests, and abilities of students.

• Teachers should plan lessons that arouse curiosity and push students towards higher order thinking and knowledge construction. For example, in addition to reading textbooks, students must learn by doing such as fieldtrips where they can interact with nature and society.

• Students are encouraged to interact with one another and develop social virtues such as cooperation and tolerance for different points of view.

• Teachers should not be confined to focusing on one discrete discipline at a time but should introduce lessons that combine several different subjects.

• Students are to be exposed to a more democratic curriculum that recognises accomplishments of all citizens regardless of race, cultural background or gender. In addition,

• By including instruction in industrial arts and home economics, progressivists strive to make schooling both interesting and useful. Ideally, the home, workplace, and schoolhouse blend together to generate a continuous, fulfilling learning experience in life. It is the progressivist dream that the dreary, seemingly irrelevant classroom exercises that so many adults recall from childhood will someday become a thing of the past. Students solve problems in the classroom similar to those they will encounter outside school.
2.7 Reconstructionism

2.7.1 What is Reconstructionism?

Reconstructionism was a philosophy uniquely popular in the U.S. during the 1930's through the 1960's. It was largely the brain child of Theodore Brameld from Columbia Teachers College. He began as a communist, but shifted to reconstructionism. Reconstructionists favor reform and argue that students must be taught how to bring about change. Reconstructionism is a philosophy that believes in the rebuilding of social and cultural infrastructures. Students are to study social problems and think of ways to improve society. Another proponent of reconstructionism was George Counts (1932) who in a speech titled *Dare the School Build a New Social Order* suggested that schools become the agent of social change and social reform. Students cannot afford to be neutral but must take a position.

Most advocates of reconstructionism are sensitive to race, gender, ethnicity and differences in socioeconomic status. Related to reconstructionism is another belief called critical pedagogy. It is primarily a teaching and curriculum theory, designed by Henry Giroux and Peter McLaren, which focuses upon the use of revolutionary literature in classrooms that is aimed at "liberation." Radical in its conception, critical pedagogy was based on Marxist ideology which advocates equality in the distribution of wealth and strongly against capitalism. More recent reconstructionists such as Paulo Freire in his book *Pedagogy of the Oppressed* (1968) advocated a revolutionary pedagogy for poor students in which people can move through different stages to ultimately be able to take action and overcome oppression. He argued that people must become active participants in changing their own status through social action to change bring about social justice.

2.7.2 The Reconstructionist Curriculum

- In the reconstructionist curriculum, it was not enough for students to just analyse interpret and evaluate social problems. They had to be committed to the issues discussed and encouraged to take action to bring about constructive change.
• The curriculum is to be based on social and economic issues as well as social service. The curriculum should engage students in critical analysis of the local, national and international community. Examples of issues are poverty, environment degradation, unemployment, crime, war, political oppression, hunger, etc.

• There are many injustices in society and inequalities in terms of race, gender, and socioeconomic status. Schools are obliged to educate children towards resolution of these injustices and students should not be afraid to examine controversial issues. Students should learn to come to a consensus on issues and so group work is encouraged.

**ACTIVITY 4.3 Identify the Educational Philosophies**

Which of the following statements reflect the four philosophical traditions that have been discussed? Mark: P for essentialism, F for reconstructionism, E for progressivism, E' for perennialism.

1. The curriculum should focus on the great ideas that have survived in nature. 
2. The curriculum should be constantly changing to meet the changes in society.
3. Students be aware of global issues and the interdependence between nations. 
4. Students must be taught about change and how to bring about change.
5. Teachers and schools should emphasise academic rigor, discipline, hard work and respect for authority.
6. Teachers should guide and help them.
7. Students should be aware of globally significant issues. Students should learn to come to a consensus on issues and so group work is encouraged.
8. Schools should develop students' ability to think deeply and analytically rather than focus on temporary issues such as social skills and current trends.
9. For a country to be competitive in the global marketplace, schools should seek to produce more competent workers.
10. Since students learn effectively through social interaction, schools should plan for increased social interaction in the curriculum.
11. Students are too immature to decide what they need to learn and so the school should decide for them.
12. Teaching should emphasise relating what is learned to the real-world through field trips and internship.
13. Education is not primarily concerned with producing future workers but should emphasise learning for its own sake and students should enjoy reading, learning and discussing interesting ideas.
14. Education should enable students to recognise injustices in society, and schools should promote projects to redress social inequalities.
15. Students should be active participants in the learning process, involved in democratic class decision-making and reflecting thinking.
16. Students should be taught to be more sensitive to race, gender, ethnicity, and differences in general.
SELF-TEST 2.5
1. What is the main argument of proponents of reconstructionism?
2. What are the recommendations of the reconstructionists with regards to the curriculum?
Answer Key to ACTIVITY 2.3:

Progressivism: 4, 10, 12 & 15
Essentialism: 1, 6, 9 & 11
Perennialism: 2, 7, 8 & 13
Reconstructionism: 3, 5, 14 & 16

2.8 Psychological Foundations of Curriculum

Earlier we discussed how different philosophical orientations and believes influence curriculum. We examined four philosophical schools and their beliefs on how schools should educate the young. Here we will focus on how different psychological perspectives impact curriculum. Psychology deals with how humans learn and behave. After all, the main goal of any curriculum is to bring about learning. Hence, curriculum developers need to know how humans learn so that they can incorporate psychological principles when they design, develop and implement curriculum. Just as there are varying philosophical orientations, there are also varying conceptions of human learning and how the curriculum should be conceived especially with regards to learning in the classroom.

Scientific study of human learning began only in the late 19th century though philosophers such as Aristotle, Socrates, al-Farabi and Confucius have attempted to explain human learning much earlier. For example, John Locke, an 18th century philosopher compared children’s minds to blank slates or tabula rasa. He believed that children’s experiences are etched or carved into their minds in much the way that one writes on slates with a chalk. Learners are visualised to be empty buckets into which information is poured into by the teacher. However, today we know that children are not empty vessels but come to school have with many different experiences, prior knowledge and expectations. There is so much interest in studying human learning and various disciplines besides psychology have inquired into the mysteries of the mind. Neuroscientists, linguists, cognitive psycholinguists, organisational psychologists, philosophers and computer scientists, to name a few are engaging in studying the brain hoping to unravel its mysteries and better understand how humans learn and think.

A variety of research approaches and methods have evolved in studying how humans learn. Introspection and the use of computers produced abundant research in cognitive psychology and increased our understanding of human competence, memory, knowledge representation, problem solving ability and decision making skills in areas such as mathematics, science and economics. Developmental psychology provided some answers to how children think and understand concepts as they grew chronologically while work in social psychology revealed that learning takes place in cultural settings.

Psychology is derived from the Greek word psyche which means soul. It is a discipline devoted to the study of behaviour, mind and thought. Specifically, it deals with
the study of mental processes that determines a person’s behaviour and thinking. When applied to teaching and learning, it provides the basis for understanding how students learn and understand a body of knowledge. The curriculum developer has to know how students’ learn and to take into consideration individual differences when designing a curriculum. It is only when students learn and gain from the curriculum will the curriculum be considered to be successful.

The curriculum developer is interested in knowing how organisation of the curriculum can enhance learning. Ralph Tyler, a well-known scholar in curriculum development proposed in the 1960s that anything that is to be taught in the classroom should be subjected to a psychology “screen” to establish whether they are congruent with how humans learn. [We will examine in detail about Ralph Tyler in Module 4]. While there is a great deal of interest in studying human learning, anyone involved in curriculum work should also be aware that there are many different explanations of human learning. We have not been able to say with certainty how people learn. Generally, there are four psychological perspectives or schools of thought that have had an impact on curriculum; classified as behaviourism, cognitivism, humanism, and constructivism (see Figure 2.1).

**2.9 Behavioural Perspective**

In 1879, Wilhelm Wundt established the first laboratory in Germany dedicated to the scientific study of human thought processes which is often used as the beginning of
modern psychology. His approach to using experiments to studying the human mind moved psychology from the domain of philosophy to the laboratory. Through introspection, Wundt and his colleagues tried to get their subjects to reflect on their thought processes. By the turn of the century, the behaviourist school emerged as a reaction to the method of introspection used by Wundt. Proponents of behaviourism argued that the introspection method was too subjective and felt that scientific study of psychology must be restricted to the study of behaviours that can be observed and the stimulus that brings about the behaviour. The behaviourist approach in studying learning can be traced to the philosophic traditions of Aristotle, Descartes and Locke. They argued that behaviour can be conditioned by altering the environment. In other words, by manipulating and giving a certain stimulus, a certain response can be produced. Motivation to learn was assumed to be driven by drives such as hunger, rewards and punishment.

2.9.1 Ivan Pavlov (1849-1936)

The famous Russian physiologist, Ivan Pavlov introduced the theory of classical conditioning through a series experiments with dogs (see Figure 3.1). Based on the Law of Association proposed by Greek philosophers such Aristotle, he showed that an organism can associate a particular stimulus (S) with a particular response (R). Learning is the result of an association formed between a stimulus (such as food) and a response (the animal salivating). Later, one could substitute ‘food’ with the sound of a bell (a neutral stimulus) and yet the animal salivates. Such associations or "habits" become strengthened or weakened by the nature and frequency of the S-R pairings. For example, when the organism realises that the sound of the bell does not result in food, the animal stops salivating and the behaviour is said to be extinct.

2.9.1 Edward Thorndike (1874-1949)

Thorndike also worked with animals and defined learning as habit formation. In his experiments, a hungry cat was placed in a box and could escape and eat the food by pressing a lever inside the box (see Figure 3.2). After much trial and error behaviour, the cat learned to associate pressing the lever (Stimulus) with opening the door (Response). This S-R connection when established resulted in a satisfying state of affairs (escape from the box). Each time the animal was put in the box, it took lesser time to press the lever and escape because the animal has learned. Based on these experiments, Thorndike proposed three laws which he called:

- Law of Effect – If a response (eg. doing a mathematics problem) is followed by a pleasurable or rewarding experience (eg. student gets the right answer and is praised by the teacher), the response will be strengthened and become habitual.
- Law of Exercise – Connections between stimulus (eg. getting the right answer) and response (eg. doing a mathematics problem) is strengthened with practice and weakened when practice is discontinued.
- Law of Readiness – Certain behaviours are more likely to be learned than others because the nervous system of the organism is ready to make the connection leading to a satisfying state of affairs. It is preparation for action.
The task of the teacher is to arrange the classroom and learning activities so as to enhance connection between a stimulus and response.

2.9.3 B. Frederick Skinner (1900-1980)

He worked with rats and pigeons. The theory of Skinner is based upon the idea that learning is a function of change in overt behaviour. He introduced the term ‘operant’ which means to act upon. He put a hungry rat in a box and each time the rat pressed the lever, a food pellet would be given. This resulted in the rat pressing the lever each time it wanted food. The change in behaviour or learning by the rat is the result of the animal’s response to events (stimuli) that occur in the environment. For example, a child will do her homework because she knows that she will be allowed to watch her favourite TV programme. When a particular response or behaviour is reinforced (rewarded), the individual is conditioned to respond.

Reinforcement is the key element in Skinner's S-R theory. A reinforcer could be anything. It could a parent saying ‘good work’ or the child obtaining an ‘A’ in history which gives the child a feeling of accomplishment and satisfaction. These are examples of positive reinforcement. However, there are also negative reinforcers which are any stimuli that give rise to a response when it is withdrawn. For example, the rat will press the lever to stop the electric shock given. A mother will pick up her child who is crying because she cannot bear to hear him cry. Similarly, when you enter a car, you put on the safety belt to avoid the irritating sound of the buzzer. In other words, the behaviour of ‘picking the baby’ and ‘putting on the safety belt’ is performed to avoid unpleasantness. On the other hand, punishment is administered when you want to reduce the occurrence of a particular behaviour. For example, a boy who does not help his mother is not allowed to go out to play football. In other words, the mother is depriving the boy the pleasure of playing football. Based on a schedule of rewards and punishment, the behaviour of an organism can be modified.

What is the difference between classical conditioning and operant conditioning? In classical conditioning, the organism is not able to change the environment. For example, in Pavlov’s experiments, the dog had no choice whether to salivate or not when given food or the sound of the bell. In operant conditioning, the organism has the choice to act or not to act because its response is determined by the stimulus or the food given. Operant conditioning has been widely applied in behaviour modification, classroom management and instructional design. Programmed instruction based on Skinner’s ideas was widely adopted in the 1960s and still used today (with modifications). For example, in programmed instruction students are presented with manageable chunks of information in gradual steps and feedback is immediately provided to reinforce understanding. Good performance is provided with reinforcers such as verbal praise, prizes and good grades. Remember the gold or silver star you would get next to your name in primary school for good behaviour or good grades! Behaviour that is positively reinforced will be repeated and information presented in small amounts can reinforce and shape the formation of the behaviour desired.

2.9.4 Walter Bandura (1925 – present)
The social learning theory of Bandura emphasised the importance of observing and modelling the behaviours, attitudes, and emotional reactions of others. According to Bandura learning would be a slow process if people had to rely solely on their own efforts to do anything. Fortunately, a substantial amount of human behaviour is learned by observing others. For the student to learn, they must watch and pay attention to the model and the behaviour being modeled. The information observed must be retained in some form in memory. Next, the student must have the necessary motor and cognitive skills to reproduce the modeled behaviour. The motivation to observe and reproduce the modeled behaviour depends on whether the student will derive satisfaction from reproducing the behaviour observed.

Among the most common and pervasive examples of social learning situations are television advertisements. Advertisements suggest that drinking a certain beverage or using a particular hair shampoo will make us popular and win the admiration of attractive people. Depending upon the component processes involved (such as attention or motivation), we may model the behaviour shown in the advert and buy the product being advertised. Individuals are more likely to model behaviours that result in something that is valued or if the model is similar to the observer and has admired status.

**SELF-TEST 2.6**
What are the differences and similarities between operant conditioning and social learning?
Give examples of classical conditioning, operant conditioning and social learning in daily life.

### 2.9.5 Behaviourism in the Classroom

The following is a list of behaviourist principles applied in teaching and learning:

- Use a system of rewards to encourage certain behaviours and learning
- When learning factual material provide immediate and frequent feedback for complex and difficult concepts
- Provide practice, drill and review activities to enhance mastery of facts
- Break down complex tasks into smaller and manageable subskills
- Sequence material to enhance understanding eg. teach simple concepts first before proceeding to more difficult and abstract concepts
- Model the behaviour students are to imitate and repeat demonstrations when necessary
- Reinforce when students demonstrate the modelled behaviour
- State the learning outcomes desired for the benefit of both teachers and students
- Establish a contract with students on the work to be done and what rewards will be given

### ACTIVITY 2.4

Which of the behaviourist principles listed in 3.2.5 do you think are widely practiced in classrooms? Give specific examples.
Select a textbook and examine how any of the behaviourist principles have been used.
In the 1950s there was a realisation that behaviourism did not fully explain human learning. Although behaviourism emphasised learning that was observable and measurable, there was something missing, namely mental events. In other words, what is going on in the minds of the learner when he or she is learning or thinking (see Figure 2.2). Cognitivists felt that it was necessary to investigate how learners make sense of what they learn, even though such mental events are difficult to observe and measure objectively. For example, when students are asked ‘What is the capital of China? One student responds ‘Beijing’ while another responds ‘Shanghai’. Why did one student answer correctly while the other got it wrong? By observing the responses individuals make to different stimuli, cognitivists make inferences of the mental processes that produce those responses.

Figure 2.2 The Mystery of the Black Box

Cognition can be defined broadly as the act or process of knowing. Cognitive theories of learning focus on the mind or ‘black box’ and attempt to show how information is received, assimilated, stored and recalled. However, it should be noted that unlike behaviourism there is no single theory explaining cognitive processes or the mysteries of the ‘black box’. Evidence seems to indicate that learning is a multi-faceted, complex and dynamic process. Research in cognitive psychology has been prolific and many theories have been proposed based on empirical evidence. This is not surprising

2.10 COGNITIVISM
since the human mind is so complex and attempting to unravel its mysteries is only just beginning. The various theories proposed examine a small facet of cognition and for this reason there are many explanations of how humans think, solve problems, make decisions and learn.

2.10.1 The Information Processing Approach

All learning has to do something with memory. If we cannot remember from what we have experienced we will never be able to learn anything. For example, one morning you are introduced to Shalin. That afternoon you see again and say something like, “You’re Shalin. We met this morning”. Clearly you have remembered her name. Memory is crucial in learning and the ‘Stage Theory’ proposed by Atkinson and Shiffn (1968) argue that information is received, processed and stored in three different stages. This theory has also been described as the Information Processing Approach (see Figure 2.3).

The sensory memory receives information from various sources (visual, auditory, smell, touch and taste) and the brain will only focus on information that has been attended to. For example, we normally are not aware of the sensory properties of stimuli, or what we are exposed to unless we are asked to specifically identify such information. People are more likely to pay attention to information that is interesting or important to them. Sensory memory is very short and lasts for about ¼ second. Information that is attended to is encoded into short term memory (STM). Encoding is transforming information received into a form that can be deposited or stored in memory. A striking feature of short term memory is its very limited capacity. On the average it is limited to
seven chunks, give or take two i.e. 7 plus or minus 2 (Miller, 1956). A chunk is a unit that could be number of words, digits, sentences or even paragraphs. To keep information ‘active’ in STM you must do something to it. For instance, when you look up a phone number you repeat it over and over in your mind in order to retain it until you have dialled the number. We keep information active by rehearsing it, either by repeating it (maintenance rehearsal) or give it meaning by relating it to something we already know (elaborative rehearsal) to prevent it from fading from STM.

Information that is encoded and rehearsed is stored in long-term memory which consists of information that has just happened a few minutes ago or as long as a lifetime. It has been said that all you have learned and experienced in your lifetime is stored in long term memory; nothing is lost. Long term memory has an unlimited capacity or storage area. When you are unable to recall from long term memory, it is the result from a loss of access to the information rather than from a loss of the information itself. It is there but cannot be found. That is, poor memory may reflect a retrieval failure rather than a storage failure. Failure to find your car keys does not necessarily mean it is not there; you may be looking in the wrong place or it may simply be misfiled in your brain and therefore inaccessible. Research has identified that successful retrieval from long term memory is enhanced when the information is properly organised and the context in which you retrieve the information is similar to the context in which you encoded it. For example, at a meeting you met various professionals – doctors, teachers, journalists and accountants. When you later tried to recall their names, you would do better if you organised your recall by profession: Who were the doctors I met? Who were the teachers? And so forth. A list of names or words is far easier to recall when you sort the words into categories and then recall the words on a category-by-category basis. Organisation improves retrieval, presumably by making memory search more efficient.

Information is stored in long term memory as a network and the more we elaborate on it, the more you will remember. In other words, the more connections that are established between the new information and what is already stored, the greater the number of retrieval possibilities. Information in long term memory is usually encoded in terms of its meaning. Memory can be improved by making meaningful connections between what is known and what is new.

2.10.2 Meaningful Learning

The search for meaning or making sense of one’s experiences is innate and the need to act on one’s environment is automatic. Our brain has been described as both artist and scientist as it is designed to perceive and generate patterns. When confronted with meaningless or unrelated isolated pieces of information, it tries to make sense and create order Learners are constantly patterning, or perceiving and creating meanings all the time in one way or another. Information is processed at multiple levels depending upon its characteristics. The "deeper" the processing the more that will be remembered (Craik and Lockhart, 1972). Information that involves strong visual images or many associations with existing knowledge or elaborations will be processed at a deeper level. Things and events that are meaningful are better remembered because it requires more processing than meaningless stimuli. The greater the processing of information during learning, the more it will be retained and remembered.
Learning is seeing patterns; teaching is surrounding learners with the patterns that are already known by the culture. And the difference between Nobel Prize winners and others is that they see patterns that have not been seen before (John Polanyi, Noble Laureate).

Schools cannot stop learners from creating meaning, but can influence the direction. Although much of what students are to learn is predetermined by the curriculum, the ideal process is to present information in a way that allows the learner to extract patterns, rather than try to impose the patterns. The learning environment needs to be stable and familiar. At the same time provisions must be made to satisfy the learner’s need for curiosity and hunger for discovery and challenge. Lessons need to be exciting, meaningful, and offer students abundant choices. All students need to be provided with a rich environment with complex and meaningful challenges.

David Ausubel (1960), a medical practitioner argued that learning occurs when one’s current organisation of knowledge is changed, either because a subsuming concept has been elaborated with the new information or because existing concepts are now connected by a new subsuming concept. This indicates that learners change their knowledge in a meaningful and coherent way based on prior knowledge.

Students come to school with quite sophisticated theories about the world and an intuitive understanding of language, numbers, and science based on their previous experiences. They are capable of complex thinking which they apply to problems in their daily lives, even without mastering some of the basic skills. However, also included in this prior knowledge are preconceived ideas and misconceptions such as stereotypes (e.g. of race, gender, etc) and simplistic notions about the workings of the real world. When you ignore such prior knowledge, you miss a tremendous opportunity to place new knowledge in context and to challenge pre-existing mistaken ideas. If efforts are not made to figure out what students believe and then confront their flawed or incomplete notions about the world, they will continue to hold on to many misconceptions, some of which will make it impossible for them to ever truly understand more complex concepts.

**SELF-TEST 2.7**

What are the characteristics of the three memory stores?
What is meant by ‘meaningful learning’?

2.10.3 Cognitivism in the Classroom

The following is a list of cognitivist principles that may be practiced in the teaching and learning of various subject areas:
Gain the students' attention
- Use cues to signal when you are ready to begin.
  - Move around the room and use voice inflections (changing tone)
Bring to mind relevant prior learning
- Review previous day's lesson.
- Have a discussion about previously covered content.
Point out important information
- Provide handouts.
- Write on the board or use transparencies
Present information in an organised manner
- Show a logical sequence to concepts and skills.
- Go from simple to complex when presenting new material.
Show students how to categorise (chunk) related information
- Present information in categories.
- Teach inductive reasoning.
Provide opportunities for students to elaborate on new information
- Connect new information to something already known.
- Look for similarities and differences among concepts.
Show students how to use coding when memorizing lists
- Make up silly sentence with first letter of each word in the list.
- Use mental imagery techniques such as the keyword method.
Provide for repetition of learning
- State important principles several times in different ways during presentation of information (STM).
- Have items on each day's lesson from previous lesson (LTM).
- Schedule periodic reviews of previously learned concepts and skills (LTM).

A baby is born and soon takes her first step. In that short period the amount of learning and understanding of her immediate environment is enormous. The early years are significant because it provides the basis for language, physical dexterity, social understanding and emotional development for the rest of the child’s life. Just imagine the vast amount of knowledge that would have been acquired by the time the child enters school. Increasingly there is evidence to suggest that not everything the child learns is taught by adults. The child teaches herself by absorbing information and experiencing the world around her. Such learning is the basis of constructivism, an idea that has generated much excitement and interest among educators.

2.11.1 Learning is the active construction of knowledge

Constructivism is a perspective of learning that has its origins in the works of Bruner, Piaget and Vygotsky. The knowledge, beliefs and skills an individual brings to a learning situation should be given due importance. Learners are not passive recipients of information but are active agents engaging in constructing their own knowledge. According to Piaget (1955), this is done through three mechanisms namely; assimilation (fitting a new experience into an existing mental structure), accommodation (revising an existing schema because of a new experience) and equilibrium (seeking cognitive stability through assimilation and accommodation). In other words, learning involves the construction of new understanding by combining prior learning with new information. In other words, knowledge is constructed in the mind of the learner (Brooks and Brooks, 1993).

If this be the case then knowledge is seldom transferred intact from the mind of the teacher to the mind of the student. “Knowledge is the result of an individual subject’s constructive activity, not a commodity that somehow resides outside the knower and can be conveyed or instilled by diligent perception or linguistics communication” (von Glaserfeld, 1990, p.37). Knowledge is something which is constructed personally by individuals in an active way, as they try to give meaning to that knowledge. Learners construct their own knowledge by looking for meaning and order; they interpret what they hear, read and see based on their previous learning, habits and experiences. Students who do not have appropriate background knowledge will be unable to accurately “hear” or “see” what is before them.

What does this mean for classroom learning? Students should not be treated as passive learners but rather as active learners exploring and going beyond the information given. They should be provided with authentic and challenging projects that encourage students and teachers working together. Authentic settings provide learners with opportunities to see a problem from different perspectives as well as negotiate and generate solutions through sharing and exchange of ideas. In an authentic environment, learners assume responsibilities for their own learning. The goal is to create learning communities that is more closely related to collaborative practice in the real world.

2.11.2 Learning is a social activity

Constructivism emphasises that learning is a social activity. The environment in which young people learn has a very powerful influence on them. The subtle and overt cues that pervade a community influences them. Often it is social experiences, rather than what is taught in schools, that accounts for much of the variation in student learning. The
community is the basic fabric of student learning encompassing the values, beliefs, norms, habits and behaviours of a culture (Vygotsky, 1978). As students enter adolescence, the social fabric of their learning expands as their contacts broaden and they become more closely identified with peers. Within their peer group, young adolescents encounter many new ideas and points of view.

If learning is social and students are social, it seems logical that social engagement is a powerful vehicle for enhancing learning. Cooperative, collaborative and group investigation methods allow students to discuss ideas, beliefs, conceptions, inconsistencies and misconceptions with their peers and teachers. Learning is enhanced when students learn how to learn together, engage in serious discussion, examine important topics, and have shared responsibility for applying what they know to new situations. Organising for this kind of learning is a much more complex kind of teaching compared to lecturing or demonstrations.

Every child’s learning develops in the context of a culture and through culture students acquire much of the content of their thinking as well as the tools of intellectual adaptation. Culture teaches children both what to think and how to think and through problem solving share experiences with others such as the teacher, parent, sibling or significant others. A difference exists between what a student can do on his own and what the student can do with help or the zone of proximal development (Vygotsky, 1962). What learners can do on their own is their level of actual ability and what they can do with help is their level of potential ability. So, with appropriate adult help, students can often perform tasks that they are incapable of completing on their own. Schools need to create the conditions within which students can come to recognise their own beliefs and engage in challenge phenomenon in their environment through investigations, reading, laboratory investigations, debates, etc.

SELF-TEST 2.8
What do you mean by ‘students constructing their own knowledge’?
What do you mean by ‘learning is a social activity’?
Why are authentic and real world situations important in learning?

2.11.3 Constructivism in the Classroom

Student autonomy and initiative are accepted and encouraged
- respect students’ ideas and encourage independent thinking
- teachers help students attain their intellectual potential
- students take responsibility for their own learning

Higher-level thinking is encouraged
- teachers challenge students to make connections, analyse, predict, justify and defend their ideas
- way in which teachers ask questions will influence student response
- teacher asks open-ended questions and allows wait time for responses
Students are engaged in dialogue with the teacher and with each other
- students present what they and build their personal knowledge
- comfortable to express their ideas to allow for meaningful learning

Students are engaged in experience that challenge hypotheses and encourage discussion
- students generate varying hypotheses about phenomena
- provide opportunity to test their hypotheses through dialogue
- the class use raw data, primary sources, manipulatives, physical and interactive materials
- involve students in real-world situations

Curriculum
- curriculum emphasises big concepts, beginning with the whole and expanding to include the parts
- knowledge is seen as dynamic, ever changing with experience


The humanistic approach to learning refers to a wide variety of ideas and techniques. While there may be many interpretations, they all advocate humanising teaching and learning. The learner is a person who has feelings, attitudes and emotions. Emotions such as self-efficacy, self-assurance, intrinsic and extrinsic motivation determine how a student approaches learning. However, not all emotions facilitate learning. Stress and constant fear have a profound effect on learners’ ability to think and learn effectively. Past experience such as grades and failures have a major impact on a student’s current ability to learn. Three noteworthy personalities who have had an impact on the emergence of humanistic psychology are Abraham Maslow, Carl Rogers and Arthur Coombs.

2.12.1 Abraham Maslow
He observed that humans are constantly striving to control their behaviour and seeking to gratify themselves. He proposed his well-know theory called ‘Maslow’s Hierarchy of Needs’ (1943). According to this theory, individuals satisfy their needs as follows:
a) Survival needs: food, water, air and rest  
b) Safety needs: to be safe and avoid danger  
c) Belongingness and love needs: gain affection of people and need to belong to a group  
d) Esteem needs: to be recognised and feeling worthwhile  
e) Knowing and understanding needs: a desire to know, learn and understand things  
f) Self-actualisation needs: to develop one’s full potential and to fulfil one’s aesthetic needs

Everything possible should be done to ensure that the lower-level needs of students are satisfied, so that they are more likely to function at the higher levels. Parents and society play a significant role in ensuring that the physiological, safety, love, belonging and esteem needs of children are satisfied. While schools cannot control all the influence that impinges on a learner, they can create an atmosphere of trust, warmth and care. Schools need to create a non-threatening environment where students feel safe and comfortable.

2.12.2 Carl Rogers
Carl Rogers was a psychotherapist who believed that the client was the most important person and developed what he called client-centred therapy. The therapist was not to tell the client what to do but rather the client should learn how to control his or her own behaviour. He established a warm, positive and acceptant atmosphere in which he was able to empathise with his clients and sense their thought and feelings. When applied to education, he proposed that classrooms become learner-centred and teachers should facilitate learning. The teacher helps students explore new ideas about their lives, their school work, their relations with others, and their interaction with society. Letting students talk about their feelings and finding ways to vent their emotions productively can help them to learn.

2.12.3 Arthur Combs
Arthur Combs believed that how a person perceives himself or herself is most important and that the basic purpose of teaching is to help each student develop a positive self-concept. The role of the teacher is that of facilitator, encourager, helper, colleague and friend of his or her students. Combs elaborated on these points by listing six characteristics of good teachers: 1) they are well-informed about their subject; 2) they are sensitive to the feelings of students and colleagues; 3) they believe that students can learn; 4) they have a positive self-concept; 5) they believe in helping all students do their best; 6) and they use many different methods of instruction.

SELF-TEST 2.9
What is the humanistic view of learning?
What do you mean by ‘teacher as facilitator’?
What are the 6 characteristics of good teachers according to Arthur Combs?
2.12.4 Humanism in the Classroom
The following are some humanistic techniques in the classroom:

- Establish a warm, democratic, positive and non-threatening learning environment in which learner’s self-concept and self-esteem are considered essentials factors in learning
- When it seems appropriate, function as a facilitator where the he or she works and shares ideas with students
- When the teacher is comfortable, the teacher may occasionally show his or her “real person” by telling students how he or she feels
- Provide learning experiences that will lead to the development of habits and attitudes that teachers want to foster
- Teachers should be role models and set good examples
- Students and teachers plan together the experiences and activities of the curriculum
- Students are given choices (with limitations) and freedom (with responsibilities); the extent of choices and freedom is related to the maturity level and age of students
- Learning is based on life experiences, discovery, exploring and experimenting

ACTIVITY 3.5

Which of the humanistic principles listed in 2.12.4 do you think are widely practiced in your school? Give specific examples. Do you think schools give enough attention to the affective (emotions, feelings) aspects of learning?


**ACTIVITY 3.6**

**Curriculum for Western Australian Schools**

### Principles Guiding Teaching and Learning

The following are 7 principles of teaching and learning the learning environment in Western Australian Schools based on contemporary research and knowledge about how learning can be supported. The focus is on creating a school and classroom environment which is intellectually, socially and physically supportive of learning.

#### Opportunity to learn
Learning experiences should enable students to observe and practice the actual processes, products, skills and values which are expected of them.

#### Connection and challenge
Learning experiences should connect with students’ existing skills and abilities while also extending and challenging their current ways of thinking and acting.

#### Action and reflection
Learning experiences should be meaningful and encourage both action and reflection on the part of the learner.

#### Motivation and purpose
Learning experiences should be motivating and their purpose clear to the student.

#### Inclusivity and difference
Learning experiences should respect and accommodate differences between learners.

#### Independence and collaboration
Learning experiences should encourage students to learn both independently and from and with others.

#### Supportive environment
The school and classroom setting should be safe and conducive to effective learning.

[Source: Government of Western Australia, Curriculum Council. www.curriculum.wa.edu.au/pages/framework/framework03g.htm]

### Questions:

Based upon what has been discussed in this chapter, can you identify which psychological perspectives are emphasised.

What is meant by the term “learning experiences”?

To what extent are these principles of learning emphasised in your school curriculum?
READINGS


  - *Chapter 1: Perspectives on learning: the cognitive approach*
  - *Chapter 2: Perspectives on learning: the behaviourist and humanistic approaches.* [available at eBrary]


