CHAPTER II: THE LEARNING PROCESS

1. LEARNING DEFINITION

There is no one, simple definition of learning. Learning is a complex concept that is defined differently according to the context in which it is being discussed. Psychological definitions emphasize that learning involves " a change in behaviour or potential behaviour that occurs as a result of experience" (Smith, 1993).

• Learning is a process of progressive behaviour adaptation (Skinner, 1960).

• Learning is a process by which a person becomes changed in his behaviour through self-activity (Leagans, 1961).

• Learning is the process whereby knowledge is created through the transformation of experience (Kolb, 1984).

• Van den Ban & Hawkins (1988) defined learning as the acquiring or improving the ability to perform a behavioural pattern through experience and practice.

• Learning is any relatively permanent change in behaviour that occurs as a result of experience or practice (Weiss, 1990).

• Learning is a relatively permanent change in behaviour that results from practice (Atkinson et al, 1993).

• According to Woolfolk (1995), learning occurs when experience causes a relatively permanent change in an individual's knowledge or behaviour

2. LEARNING THEORIES

2.1. Behaviourism

The first half of the twentieth century was dominated by a view, which saw learning as a matter of habit-formation. Influenced by the work of theoreticians such as John B. Watson, or B.F. Skinner (who based their theory in experiments carried out by the Russian psychologist Ivan Pavlov),

Behaviourists saw learning as stemming from habit formation. To them, effective learning was a matter of reinforcing good habits, while errors were seen as bad habits.

B.F. Skinner, in particular, developed a radical form of Behaviourism and posited that learning happened through a three-step reinforcement cycle. This cycle started with a stimulus,

which triggered a response in the organism (in our case, humans). If the response was correct, it was to be reinforced positively. However, if the response was incorrect, it was to be punished or negatively reinforced. Skinner based his theory in his study of rats in laboratory conditions. He invented what is known as **the Operant**

Conditioning Chamber, a maze with levers where rats and pigeons were put in order to study them. The procedure involved the animals in trying to get out of the maze by going through it. At some points, there were levers, which the animals were supposed to press. If they pressed the right levers they got food (positive reinforcement), but if the lever they pressed was the wrong one they received an electric shock (negative reinforcement). With time, animals learned to press the correct levers and stay away from the ones that would give them no food or an electric shock.

The influence of behaviourism is still felt in many areas of education. For example, the use of the blackboard/whiteboard, the way classrooms are set up with chairs facing the front of the class, the use of questions and answers to review materials, multiple choice and true/false questions, and, in language teaching, repetition drills are all products of Behaviorism. Skinner understood language as a series of habits to be acquired. He denied that the mind or internal cognitive processes could have any kind of role in learning. To him, because internal mental processes could not be observed, they were rendered ineffective to analyze. Instead, he posited, we should focus on the overt, observable effect of those mental states and study them as proof of learning. Skinner's theory of learning, and particularly language learning, was laid out in a book that became the main reference for educators around the world. In 1957, he published ***Verbal Behavior*** through the US-based Copley Publishing Group. While this book was the peak of his research and a synthesis of his life's work, it would also be his downfall.

2.2. Chomsky's contributions

In 1959, Noam Chomsky, a linguist at the Massachusetts Institute of Technology (MIT) published a review of Skinner's *Verbal Behavior* in which he discredits behaviourist theory and advances a new understanding of how language is learned.

According to Chomsky, behaviorism cannot account for the fact that children produce original sentences they have never heard before or above and beyond any language they have been exposed to before. If, as Skinner proposed, stimuli are the reason why responses are

given, how is it possible for children to produce new language formations without ever having received that stimulus?

To Chomsky, there should be something else, beyond overt behaviour that accounts for the capacity to learn and use language. In his view, we are born with a predisposition to learn and use language. Hence, his view of language and language learning is termed "innatism." We are innately endowed with the power of language learning. However, it should be noted that we are not born with a language. Instead, our mind has the innate capacity to hypothesize and discover rules based on the language we have received. This ability to create new language depends on an intuitive knowledge of rules. Given that children are exposed to "messy" language in use, it is notable that with some trial and error and, in a relatively short period of time, children are able to discover rules of language, which are inevitably correct. This realization led Chomsky to hypothesise about the existence of an innate Language Acquisition Device (L.A.D.) responsible for supporting the existence of a Universal Grammar (U.G.). This UG shapes all human languages in much the same way as we are born with the ability to learn to run.

Alongside these concepts, Chomsky also marked a clear difference between knowledge of the language (which he calls "competence") and the actual use of that knowledge for communication (which he calls "performance"). To Chomsky, UG is primarily concerned with competence; hence the deep structure of any language is made up of very few elements that can be combined in various forms to express different meanings at the performance level. By putting the intentional element in his theory, Chomsky managed to override behaviorist theory completely. Our linguistic competence allows us to create completely original sentences we have never heard before such as "The small pink elephant spread its wing and dove into the heights of the ocean."

While the sentence is completely grammatical, it is totally meaningless. Unless we are intentionally using these words to create poetical images, it is clear that language use is much more than just responding to outside stimuli.

Chomsky's ideas took the world of language learning by storm, and although he based his research only on L1 acquisition and explicitly claimed that he was "frankly, rather skeptical about the significance, for teaching languages, of such insights and understandings, as have

been attained in linguistics" (Chomsky, 1966: 152), his ideas also had an impact on L2 learning and teaching.

Accepting the theory of UG implies, for L2 learning, that learners have their own transitional form of their language, which is internally developing and follows an in-built learning path. This is called "interlanguage." Interlanguage is a theory created by S.P. Corder (1967), which regards the learner's L2 as a system in its own right – a system with its own grammar, lexis and pronunciation. One difference is that the learner's system has a much smaller lexicon (vocabulary) than the native speaker's – not only of words, but crucially of multi-word lexical items such as collocations and fixed expressions. Perhaps more interesting and complex are the differences in grammatical systems. The learner's system has simpler and fewer rules. For example, the grammatical system of a beginner student of English may contain the rule 'all verbs for all persons and all time references use the base form'. Of course this rule is never explicitly expressed but can be inferred from the student's output.

The learner's grammatical system may also be influenced by rules from their L1, a theory generally known as "L1 interference" and which affects all language systems: syntax, lexis, phonology and pragmatics.

One way of looking at Interlanguage is as a kind of learner dialect. At lower levels this dialect is simple, with a restricted lexicon, few grammatical rules and a pronunciation system borrowed from their L1. At higher levels, this dialect is more similar to the target language with a large lexicon, a grammatical system similar to that of native speakers and native-like pronunciation. Interlanguage is therefore a continuum with the learners' language gradually moving towards that of a native speaker.

Chomsky's ideas have given rise to many pervasive influences felt today in language teaching. One such influence is the marked emphasis on the explicit teaching of grammar present in many textbooks and classes. Also, the whole area of feedback to students has been affected, with many proponents suggesting that indirect correction is better than direct correction since we are dealing with students' interlanguage.

2.3. Constructivism

Chomsky's ideas need to be understood within the frame of a **theory of learning,** which challenged Behaviorism and proposed a radically different view of learning and teaching. This

theory is called Constructivism and it originated in the work of epistemologist Jean Piaget. Piaget was interested in **discovering the origin of knowledge** or, in other words, **how we come to know the world.**

Piaget's theory relies heavily on a cognitive view of the processes involved in learning. He posited that the development of cognitive structures is a matter of biological regulation. He carried out his studies with children and adolescents and concluded that learning is a matter of two interrelated processes: **assimilation and accommodation.** Assimilation is the taking of new information or experiences and incorporating them into our existing "knowledge bank" or schemata. Encountering this new information causes an imbalance in our schemata. Hence, through an experiential process we progressively accommodate this new knowledge or experience so as to reestablish balance in our cognition through a process called accommodation. This process entails changing our existing schemata or ideas, as a consequence of new knowledge or experience.

Piaget views these processes as occurring throughout an individual's lives with individuals being in a constant search for equilibration. However, he considers that there needs to exist a certain biological predisposition for an individual to be able to engage in the process of assimilation.

However, the best-known part of Piaget's theory is that of the stages of development. He distinguished the following stages with their respective characteristics:

2.3.1. Sensorimotor stage (birth to 2 years of age)

Children experience the world through their five senses. During this stage children are very egocentric, i.e. they cannot perceive the world through others' points of view. During this stage, children move from simple reflexes to progressively developing control over their senses.

2.3.2. Preoperational stage (2 to 7 years of age)

During this stage, motor skills are developed. Children are still egocentric, but this tendency decreases as they become older and begin to take perspective. Children's **imagination is at its peak** during this period but **they cannot think logically**, yet.

2.3.3. Concrete operational stage (7 to 11 years of age)

During this stage, children **begin to think logically** if presented with practical, concrete aids. They are also **able to "decenter**," that is to say, to perceive the world from others' point of view. **The egocentric phase disappears**.

2.3.4. Formal operational stage (11 to 16 years of age and onwards)

It is during this stage that **children develop their abstract thinking** and are fully capable of using logical thinking. Egocentrism has disappeared and is replaced by a feeling of belonging to groups.

Piaget's ideas about learning and development have left an important imprint in education. Methodologies, such as **Active Learning and Discovery Learning**, stem from his conceptualization of development as a precursor of learning. His ideas became really potent during the second half of the twentieth century and spurred the "student centered" movement in Pedagogy.

We should bear in mind that Piaget's education came mostly from the natural sciences. Hence, his thinking is highly typological. The description of human development in stages is a clear example of this. Although he did not directly address the process of language acquisition, he did consider it a fundamental cognitive process, which aids both development and learning. In the field of linguistics, his ideas were used as the basis for models of language acquisition such as Krashen's Input Hypothesis.

3. STEPHEN KRASHEN

Stephen Krashen is a linguist and researcher. During the late 1970s and early 1980s he developed a model of language acquisition, which borrows heavily from the work of Chomsky and Piaget and is also influenced by the work of the Russian psychologist Lev S. Vygotsky. Krashen' s work posits that language is acquired in a natural way. He makes a parallelism between the learning of the first language and the learning of the second language. His theory of language acquisition is built around a series of hypotheses. These hypotheses speculate about the process of language development taking examples from the interaction between children and their caretakers and how this interaction affects the way in which children develop their language. His five hypotheses are the following:

3.1. Acquisition/Learning Hypothesis

Krashen sustains that there are two ways in which we develop language skills. We can do it in a natural way, through sustained exposure to the language and an emphasis on comprehension or through conscious focus on language features. He calls the first process "language acquisition" and in his theory, it is the stronger of the two in that it has supposedly more lasting effect than the second process. The second process involves the learner consciously working, studying the different systems and committing that information to memory. Krashen calls this process "language learning" and he claims that it is less effective than language acquisition.

3.2. Monitor hypothesis

When we acquire language we are able to do so because we possess an internal mechanism, which allows us, as our process of acquisition develops, to identify correct and incorrect statements. This can be equated with Chomsky's L.A.D. in that it is an innate capacity inherent to all humans. However, there are different kinds of "monitor users." Krashen describes **monitor over users** as those speakers who are constantly
assessing and planning what they are going to say. In this scenario, their expression is slow and cumbersome.

In contrast, there can be **monitor under users**, who are very fluent but who are very inaccurate in their use of the language. Krashen assumes that both these situations can be remedied if we focus on acquisition more than learning, since acquisition is supposed to foster **optimal monitor use: subconscious intuitive knowledge of correctness.**

3.3. Input hypothesis

According to Krashen, we understand input, which is comprehensible, that is to say, input which is only slightly above our current level of understanding. He posits the formula *i+1* to represent comprehensible input. In this formula, "i" stands for input, or language the learner is exposed to. The "+1" element in the formula refers to the difference between what learners actually know and what they can understand but do not yet know. This relates heavily to the next hypothesis: Natural Order.

4. NATURAL ORDER HYPOTHESIS

In Krashen's model, language acquisition occurs through predictable stages and following a predictable path, which is not affected by direct instruction. In other words, teachers may teach students a new grammar item but, if it is not the one specified in the sequence of acquisition, it will not be learned. In this sense, he considers that all humans go through the same predictable path in acquiring new syntactic features of the target language and he offers a list of these features for English. In his elaboration of the

"i+1" formula, the "+1" refers to the next syntactic feature in his path to acquisition. T his conceptualization borrows heavily from Piaget's idea of readiness for learning.

4.1. Affective filter hypothesis

In this final hypothesis, Krashen attempts to explain why different learners exposed to the same comprehensible input show different levels of acquisition of that input. The affective filter is a kind of barrier to acquisition, which goes up when the student is tense, angry, threatened, over-faced or just has a negative attitude to the language. The filter stays down when the learner is relaxed and well motivated. When the filter is "up" the learner cannot pay attention to the learning because he or she is uncomfortable. However, when the filter is "down" the learner is able to focus on meaning and the language learning experience at hand.

4.2. Lev s. Vygotsky

No analysis of learning theory or language learning would be complete without addressing the contributions of Lev S. Vygotsky. Working at the same time as Piaget, and also adopting the view that language acquisition was driven by external factors rather than being led by an innate acquisition device, Lev Vygotsky believed both first and second languages are learned via social interaction. Learning a language requires *mediation* by a more able party (such as a parent, teacher or more knowledgeable peer) who provides a supportive framework (or 'a mediated learning experience') for the learner until the new knowledge is *appropriated*, at which point learning has occurred and the mediation can be removed.

Learning is therefore seen as a 'joint enterprise' involving two or more people, so that whereas learners are unable to function independently, they can function successfully if given assistance. In devising this 'sociocultural learning' theory, Vygotsky referred to a learner's

Zone of Proximal Development (ZPD), this being the difference between what learners can do by themselves and what they can do with the help of others.

Vygotsky's theory of learning has also other important ramifications. He explained that all forms of human cognition happen first as external forms of social mediation and become internalized through interaction with others and the use of psychological tools. To him, language is one of the most important of these tools. To him, language and thought start as two separate processes in the child. However, through **socialization**, the child progressively acquires control over the language (through interaction with parents, caretakers and other speakers) so that it becomes a tool for thinking. Once the child is able to "think in words" his thinking develops in such a way that the more he thinks, the more his language also develops**.**

So, language is both a tool for and a product of thinking.

Contrary to Piaget's view, Vygotsky emphasized that in order for development to occur, learning must precede it. He cites examples of children of different ages playing together in which a child who is not supposedly "organically ready" to do something learns how to do it through the mediation of a play partner who can.

Unfortunately, Vygotsky died very young in 1936 and left few writings (mostly transcripts from his lectures). Also, his ideas were not brought to the Western world until the late 1970s and that is why we have only recently begun exploring his theory and its influence for language learning.

Activity

Think of something you have learnt which involved previous learning, developing, extending and applying your learning in new ways. Try to break the skill down into the steps you followed to achieve your learning.Eg: learning a second language, learning a craft, learning to cook.