A Literature Review of the Theories of Learning and Varieties of Learning with Emphasis on Second Language Acquisition

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Abstract:
Learning is an activity that the human mind engages in a life-long process. Learning is experiencing something new. Psychologists have tried to identify and explain the process of learning through several theories. A majority of theories have been proved and therefore been very influential in enhancing the learning process. Some of the theories continue to attract attention in the field of educational research even today. Theories of learning a language have become even more important in today's world where every individual is trying to learn a new language in order to improve his/her career prospects. English has emerged as a leading language of correspondence around the world. It is the second most popular language. One out of every five individuals speak English. Irrespective of educational or cultural background, people in a multicultural and multi lingual setting such as India, English is spoken or understood by people in some form or the other. Acquisition of English as a second language has become more important with the growth of opportunities in the education and employment sectors. In such a scenario it is essential to know how learning takes place and what are the different varieties of learning. This paper seeks to present the various leading theories of language acquisition and list the varieties of learning methodologies that can be useful in the field of education.

Keywords: learning theories, second language acquisition, varieties of learning, psychologist, English, education)

1. Introduction

1.1. Definition of Learning
Learning refers to the change in a subjects' behaviour to a given situation brought about by his repeated experiences in that situation, provided that the behaviour change cannot be explained on the basis of native response tendencies, maturation or temporary states of the subjects (e.g.: fatigue, drugs etc). Hilgard and Bower

1.2. Major Theories of Learning

1.2.1. Thorndike's Connectionism
Hilgard and Bower (1986) defined connectionism as The basis of learning accepted by Thorndike in his earliest writings was association between sense and impressions and impulses to actions (responses). Such an association came to be known as 'bond' or a 'connection'. Because it is these bonds or connections between sense impressions and responses which become strengthened or weakened in the making or breaking of habits, Thorndike's system has sometimes been called a 'bond psychology" or simply 'connectionism' (p17).
The acquisition of second language is also through impressions and responses. A learner who aims to acquire second language establishes a bond between the language that he/she desires and its environment. Self learning is the best form of learning, therefore while learning s new language one must make use of the theory of connectionism or bind psychology.
According to Troike (2008) connectionism and second language acquisition both are related to association between stimulus and response, he sums it up as
Thorndike's Connectionism differs from most other current frameworks for the study of second language acquisition in not considering language learning to involve either innate knowledge of abstraction of rules and principles, but rather to result from

increasing strength of association (connections) between stimulus and responses. This is an important causative factor in language learning. It is also providing a theoretical base for research on language teaching (p 2).

1.2.2. Pavlov's Classical Conditioning

Ivan Petrovich Pavlov was a Russian physiologist whose main research was study of salivary glands. During his now famous experiment with dogs he discovered that with repetition dogs are able to exhibit certain behaviour.

Pavlov put this knowledge to discover learning patterns in humans. According to Pavlovian theory conditioned reflexes lead to strengthening of habit with repetition and reinforcement. According to Pavlov (1955)

When a connection or association is formed, this undoubtedly represents the knowledge of matter, knowledge of the definite relations existing in the external world; but when you make use of them the next time, this is what is called insight. In other words, it means utilization of knowledge, utilization of the acquired connections (p 575).

Hilgard and Bower (1986) discussed the stimulus-response theory as it is also presumed that some sort of drive reduction is usually involved and mere contagious stimulation does not appear to be the basis of learning. (p 86)

Transfer of learning is best considered to be the result of generalization whereby one stimulus serves to evoke the conditioned reflex learned to another. Particularly in the language system, words substitute readily one for another, and thus permit wide generalizations. (p 87).

Drawing on Pavlov's findings, John B Watson (1913) coined the term behaviorism. In the empirical tradition of John Locke, Watson contended that human behavior should be studied objectively, rejecting mentalistic notions of innateness and instinct. (Applied linguistics - journal 2013)

1.2.3. Gestalt theory

Gestalt is a German word which means configuration or organization. Max Wertheimer (1880-1943) is considered the founder of Gestalt psychology along with Wolfgang Kholer (1887-1968) and Kurt Koffka (1886-1941). The slogan of the Gestaltist was, "the whole is more than the sum of its parts". "To dissect is to distort"

According to Hilgard and Bower (1975) the Gestalt theory of learning is defined   a Gestalt theory is one of the few examples of a rationalist theory in psychology. Gestalt psychologists were primarily interested in perception and in problem solving processes. Learning was viewed as a secondary derivative phenomenon of no special interest, what was learned was a product of and determined by the law of perpetual organization; what was performed depended on how current problem solving process analyzed the present situation and made use of traces of the past experience.

Since organizational laws determine the structuring of perceptions, they also determine the structure of what information is laid down in memory. In the case of trial-and-error learning in which the learner is confronted with some problem (p 255-256).

1.2.4. Skinner's Operant Conditioning

Behaviourism had a strong influence on second language acquisition. This theory had a deep impact in the field of teaching especially during the period 1940s to 1970s. Two leading voices of the movement were Nelson Brooks (1960) and Robert Lado (1964). Language acquisition was considered to be a process of habit formation and this led to the emergence of audio-lingual method of teaching. During the second world war the audio-lingual methods became a leading approach by the army to equip its troops with the foreign language.

Skinner's operant conditioning is explained by Hill (1971) as-Skinner recognizes two different kinds of learning. They are different because each involves a separate kind of behaviour.

→   Respondent Behaviour: it is elicited by specific stimuli. Given the stimulus, the response occurs automatically.

Respondent behaviour is made up of such specific stimulus-response connections called reflexes.

→   Operant Behaviour: The characteristics of operant behaviour are that it operates on the environment. There is no specific stimulus that will consistently elicit an operant response. Skinner speaks of operant behaviour as being emitted by the organism rather than by stimuli. (p59, 60)

Klein (2002) defined reinforcement as- Skinner (1938) defined a reinforcer as an event whose occurrence will increase that frequency of any behaviour that produces it. (p285)

1.2.5. Monitor Model of Learning

Stephen Krashen (1982) proposed the Monitor Model of language learning. Krashen's model is based on five hypotheses. The monitor model as explained by Lightbown and Spada (2006) is as follows-

1) Acquisition-Learning Hypothesis: Krashen makes distinction between acquisition and learning. According to Krashen acquisition happens when we pick up second language just in the same way as first language, which is through exposure to the language. There is no conscious attention to form and structure. This is akin to a child picking up its first language. Learning, on the other hand is a conscious effort in mastering form and structure of target language.

We 'acquire' as we are exposed to samples of the second language we understand in much the same way that children pick up their first language- with no conscious attention to language form. We 'learn' on the other hand through conscious attention to form and rule learning. (p 36)

2) Monitor Hypothesis: According to the Monitor Model, the acquired language enables accounts for spontaneous language use whereas the learned language system is a 'monitor' that corrects minor errors and polishes the acquired language.

According to the monitor hypothesis, the acquired system initiates a speaker's utterances and is responsible for spontaneous language use. The learner's system acts as an editor or 'monitor', making minor changes and polishing what the acquired system has produced. (p 37)

3) The Natural Order Hypothesis: The natural order hypothesis states that second language acquisition occurs in the same manner as first language.

The natural order hypothesis was based on the findings that, as in the first language acquisition, second language acquisition unfolds in predictable sequences. The language features that are easiest to state are not necessarily the first to be acquired. (p 37)

3.The input hypothesis is described as--

The input hypothesis is that acquisition occurs when one is exposed to language that is comprehensible and that contains i+1. The *i* represents the level of language already acquired, and the +1 is a metaphor for language. (p 37)

4) Affective Filter Hypothesis: The various mental states of learner such as emotions, attitude and motivation that discourage learning although a learner is exposed to large data of comprehensible input are referred to as affective filter hypothesis. For example, a tired or bored learner may not register any aspect of language although exposed to comprehensible language.

The affective filter is a metaphorical barrier that prevents learners from acquiring language even when appropriate input is available. (p 37)

1.2.6. Common theory for learning LSRW

• Keeves &Darmawann (2007) describe the common theory of LSRW based on Krashen's theory of language learning as -

Krashen (1981) has advanced, what can be considered as a strong general theory of language learning. This theory makes a basic distinction between two processes that are considered to be totally separate, namely 'formal classroom instruction' and 'acquisition' that occurs in a natural setting.

Acquisition is more likely to occur with reference to listening and speaking. Formal classroom instruction is more likely to take place with respect to reading and writing. However, acquisition is involved in learning to read. The acquisition process seems to correspond to situated action, while formal classroom instruction seems to correspond to symbol process learning. However, these two learning processes have much in common. Using the ideas of neural network, it may be possible to combine these two theories of learning into neural processes with meaningful variations (p 20).

1.2.7. Functionalism

The Functional Theory of Learning was proposed by Tichener.

• Melton defines Functionalism as-

The learning process is primarily a matter of the discovery of the adequate response to a problem situation and the fixation of the satisfying situation-response relationship (p 670).

According to Saville-Troike (2008)-

Functional models of analysis date back to the early twentieth century, and have their roots in the Prague School of linguistics that originated in Eastern Europe.

They differ from structuralist and early generative models by emphasizing the information content of utterances, and in considering language primarily as a system of communication rather than as a set of Rules-Theory of Second Language Acquisition, (p 52).

Functionalism assumes that the main purpose of language is communication. Therefore, linguistic knowledge should be of communicative use. The main focus is on ability to use language in everyday activities i.e. ability to generate everyday use of language and competence to use that language. Approaches based on Functional Theory of Learning dominated European studies of second language acquisition and are practiced across the worlds.

1.2.8. Freud's Pleasure Principle of Learning

Explaining the psychology of pleasure principle of learning according to Freud, Hergenhahn (1976) states that

Hedonistic theories holding that man seeks pleasure and avoids pain are among the oldest interpretations of human conduct and any theory of learning must come to grips with the common sense facts to which they refer.

There is no doubt that we can control learning by way of reward and punishment. Freud's pleasure principle is in accordance with these facts, and his interpretation of the pleasure principle represents one of the first points of correspondence between his views and those learning theorists. The corresponding principle in contemporary learning theory is the law of effect or reinforcement theory. (p 347).

1.2.9. Information Processing Theory of Learning

Troike (2008) states that computer technology influenced Information Processing models of learning which became established in cognitive psychology by 1960s. (p 26)

Explanation of SLA phenomena based on this framework involve assumptions that L2 is a highly complex skill, and that learning L2 is not essentially unlike learning other highly complex skills.

According to Information Process learning,

Input for SLA is whatever sample of L2 that learners are exposed to, but it is not available for processing unless learners actually notice it: i.e. pay attention to it. Then it can become intake. It is at this point of perception of input where priorities are largely determined, and where attentional resources are channeled (p 74).

Output for SLA is the language that learners produce, in speech/sign or in writing. Fluency is achieved in production both through use of automatized rule based systems and through memory-based chunks which serve as exemplars or templates and are "retrieved and used as wholes"

(Shekan 1998:60). Central processing is the heart of this model, where learning occurs. It is here that learners go from controlled to automated processing, and where restructuring of knowledge takes place (p 75).

Lightbown and Spada (2006) explained the information process model of learning as Similar 'Information processing' approaches to second language acquisition have been explored by other researchers. Drawing on J.R. Anderson's (1995) work, Robert DeKeyser (1998, 2001) and others have investigated second language acquisition as 'skill learning'. They suggest that most learning, including second language learning starts with 'declarative knowledge, also referred to as knowledge *that*. This hypothesis is that, through practice, declarative knowledge may become procedural knowledge, or knowledge *how,* in the same way that someone learns other skills like driving a car or skating (p 39-40).

1.2.10. Ausubel's Meaningful Learning Theory

Applied linguistics – e-journal (2013) David Ausubel contends that learning takes place in the human organism through a meaningful learning process of relating new events or items to already existing cognitive concepts or propositions — hanging new items on existing cognitive pegs.

The cognitive theory of learning as put forth by Ausubel is perhaps best understood by contrasting rote and meaningful learning. Ausubel (1968) described rote learning as

The process of acquiring material as discrete and relatively isolated entities that are relatable to cognitive structure only in an arbitrary and verbatim fashion, not permitting the establishment of [meaningful] relationship (p108).

That is meaningful learning on the other hand, may be described as a process of relating and anchoring new material to relevant established entities in cognitive structure. If we think of cognitive structure as a system of building blocks, then rote learning is the process of acquiring isolated blocks with no particular in the building of structure, and therefore with no relationship to other blocks. Meaningful learning is the process whereby blocks become an integral part of already established categories or systematic clusters of blocks. (extracted)

1.2.11. The Competition Model

- McDonald and MacWhinney (1991) defined competition model as

The Competition model (Bates &MacWhinney, 1982,1987, 1989; McDonald 1989) details are possible way in which people deal with the linguistic role assignment problem. A central construct in model is *cue validity*. Cue validity, a term taken from Brunswik (1956), is a measure of the cue's utility in the categorization decision. As defined in McDonald (1986), the *validity* of a cue is the product of its applicability (the percentage of instances on which it is present) and its *reliability* (the percentage of time cue indicates the correct assignment when it is present). Thus cue validity is a measure of how often a cue indicates the correct assignment over the pool of instances. (p 408).

1.3. The Different Varieties of Learning Are

1.3.1. Discursive Learning

- Young (2009) defined discursive writing as

With its emphasis on socially constructed knowledge, discursive practice is an approach in which language learning is viewed not only as the changing linguistic knowledge of individual learners but primarily as learners changing participation in discursive practice: what is learned is not the language but the practice (p 135).

1.3.2. Incidental Learning

- Incidental learning is defined by Beard (1970) as

Process which occurs in learning almost without the conscious violation of the learner include the development of schemas of perception and action, conditioning latent learning and usually during interaction with other people, suggestion, imitation and identification (47-53).

1.3.3. Problem Solving

- Beard (1970) defined problem solving as-

The result of solving a problem is that a higher order principle is learned and that the same situation should again not be a problem. Experiments show that instructing students in specific solutions is not the best way to teach problem solving; it is better to help them through questioning, to recall for themselves the principles which will enable them to find the solution (p 54).

Gagne (1985) described learning as problem solving in the following words Much of the activity of problem solving is internally guided and "learning by discovery" is typical of this form of human behaviour. Accordingly, the teacher's task is mainly one of finding and organizing appropriate problem-solving situations. Problems for students are most effective when they are novel in the sense of presenting unfamiliar situations and within the students' capabilities, that is, their previously learned skills and knowledge (p195).

1.3.4. Concept Learning

The idea of concept learning is explained by Klein (2002) There are two main theories of concept learning; one that concept learning is an associative learning and two that the concept learning is a cognitive process. Concepts have two main properties: attributes and rules. An attribute is any feature of an object or event that varies from one instance to another.
An attribute can have a fixed value. There are two theories of concept learning. One view argues that concept learning is an associative process; the other argues that concept learning is a cognitive process (p340-341 & 348).
Gagne (1985) defined concept learning as The learning of concept is usually arrived through the intermediate stage of generalization of the basic discrimination, in which distinctions are established between the relevant and the irrelevant stimulus dimensions. The situational conditions for learning concepts are largely embodied in a set of verbal cues (p 104).

1.3.5. Co-operative Language Learning

The co-operative learning model finds mention by Gonzalez (2012) as- Co-operative language learning aims at getting students involved in language learning by using co-operative activities, while developing communicative competence.
A major characteristic of CLL approach is that it can raise students' awareness of language structures, lexical items and language functions through interactive tasks. It fosters opportunities for students to be resourceful for each other. It enhances self esteem and promotes student motivation (p 255).

1.3.6. Experiential Learning

   • Tudor (2001) defined experiential learning in the following words-
The idea behind the experiential vision of learning is that the use of the TL (target language) for communicative purposes is not only the goal of learning, but also a means of learning in its own right. This may clearly involve students using language which they may not have fully mastered, and contrasts with other more 'traditional' approaches which emphasize part practice (i.e. isolating parts of the whole for explicit study and learning) leading up in a more or less controlled manner to integrated language use for communicative purposes. Nevertheless, most experiential approaches to learning rest on five main principles which were developed in the earlier days of communicative movement. These principles are the following: message focus, holistic practice, the use of authentic materials, the use of communication strategies and the use of collaborative modes of learning (p 78-79).

1.3.7. Analytical Learning

   • Tudor (2001) sums up analytical learning as-
An analytical approach to learning emphasizes the explicit study of the TL as a linguistic and communicative system.
An analytical approach to learning rests on a more or less marked degree of part practice, i.e. isolating pars of the whole for explicit study and learning, even if its ultimate goal remains the development of learners' ability to put these parts together for integrated, holistic use. Analytic approaches to learning may be seen as being located on a cline between deduction and induction (p 86-87).

1.3.8. Automaticity Theory of Learning

Language learning as habit formation has its roots in the behavioural theory of learning. This is what Johnson calls as 'automatization' of linguistic competence (1996, pp89). This concept of language learning depends heavily on stimulus-response theory and audio-lingual method. It is understood that language is a system with definite rules and principles and can be mastered.
The learner starts initially by identifying phoneme and morpheme and gradually moves upwards to the level of syntax. The idea here is to develop LSRW skills through audio-lingual method of teaching. The learner practices a piece of language knowledge to such extend that it becomes a habit with him/her. When regular repetition the components of language becomes part of the learner personality.
Tudor (2001) considered habit formation as a comprehensive theory of language. According to Tudor Automatization of linguistic competence involves a degree of habit formation. Few people would currently consider habit formation as offering a full theory of language learning, although this has not always been the case: for a relatively brief period, a vision of learning wholly based on habit formation held the high ground in language teaching (p 91).

1.3.9. Implicit and Explicit Learning

According to implicit learning principle a learner is unaware yet imbibes the general rules of the language during communication process. Implicit learning takes place at the sub-conscious level. Explicit learning on the other hand is sort of controlled and informed learning. The two varieties of styles are more complementary than independent. Both the learning styles work together. As implicit learning takes place according to the natural phenomenon of learning, it is more impressive and well formed. Explicit learning, on the other hand being more of a cognitive nature is functional and communicative.

- Jones (1997) explained implicit/explicit learning amongst learners in the following words:

Implicit and explicit learning are, however, not completely separate and independent processes. In evolutionary terms, processes such as implicit learning, which operate independently of consciousness, are more primitive and basic than those that are dependent on conscious control. Explicit knowledge has a role in that it not only helps the learner to understand language, that is to establish connections between meaning and form; but it has also an additional role in that it can feed back on acquisition, that is it can serve as a functional stimulus to the acquisition process (p 78-79).

1.3.10. Process and Procedural Learning
Johnson (1996) and Schmidt (19990) distinguish between declarative knowledge and procedural knowledge.
- Jones (1997) explained process/procedural learning as-

Procedural knowledge varies along a continuum from controlled too automatic, recent interlanguage studies describe procedural knowledge as being responsible for access to the internalized knowledge and therefore for the ability to perform on the basis of it; procedural knowledge is in fact considered itself to be a second kind of competence (Sorace, 1985, p 239). Processes seem to integrate the knowledge system itself and maintain it as a bounded organization, they are adjusted processes across boundaries.
According to Parker and Rubin (1996),
Every process, whatever its character, necessarily must have a construct-an underlying scheme which provides order and direction (p 2).
Procedural learning is based on learning the procedures and laws of language. When a learner becomes aware of procedures of language he/she is more active in making use of the language for communication skills.
Through practice declarative knowledge (previous knowledge) becomes procedural knowledge. Process learning is more of a scientific and investigative form of learning. Process learning provides scheme for order and direction in language learning.

1.3.11. Active Learning
Wimsatt, Dey et al (2000) explained the role of active learning and active learner as-
Active learning methods seek to engage students directly and actively with the course content by moving away from memorization of facts delivered unilaterally through a lecture format to a dynamic learning environment that facilitates
meaning making resulting in a deeper understanding and the ability to make connections and use knowledge beyond the classroom. The use of active learning methods requires a fundamental shift in classroom pedagogy from one that is centred on providing *instruction to one that focuses on learning (Barr & Tagg,1995) and an equally fundamental change in the role of faculty in the classroom (*p 3-4).

1.3.12. Collaborative and Cooperative Learning
- Wimsatt, Dey et al (2000) defined collaborative and co-operative learning as

Collaborative and Cooperative learning share many of the same characteristics, however differ in two important ways. First, they were originally developed to meet the educational needs of people of different ages and with different levels of maturity and ability. Cooperative learning was originally developed for use with school children, whereas collaborative learning was designed to take advantage of the knowledge, skills, and maturity levels of adolescents and adults" (p 4-5)

- Shockman & Jackson et al, (2000) explained co-operative learning as

Since the teaching methodology encourage students to work in small heterogeneous groups and to assist each other to attain mastery rather than the establishment of competition and environment of winners and losers. (p 7).
Gonzalez (2012) defined co-operative language learning (CLL) as-As its name indicates, co-operative learning aims at getting students involved in language learning by using co-operative activities while developing communicative competence. This approach is influenced by an interactive perspective of language teaching. A major characteristic of CLL approach is that it can raise students' awareness of language structures, lexical items, and language functions through interactive tasks. It fosters opportunities for students to be resourceful for each other. It enhances self-esteem and promotes student's motivation (p 255).

1.3.13. Discrimination Learning
According to Klein (2002) discrimination learning is
To respond when reinforcement is available and not when reinforcement is unavailable, we must learn to discriminate; that is, we must not only discover the conditions indicating that reinforcement is available and respond when those conditions exist, we must also recognize the circumstances indicating that reinforcement is unavailable and not respond during these times.
Skinner (1938) referred to a stimulus associated with reinforcement availability as an S^D (or S-dee) and a stimulus associated with the unavailability of reinforcement as an S^Δ (or anS-delta). Further, Skinner called an operant behavior under the control of a discriminative stimulus (either an S^D or anS^Δ) as a discriminative operant. To interact effectively with our environment, we must learn to discriminate the conditions that indicate reinforcement availability (S^D) from the conditions that do not (S^Δ). Discrimination learning involves discovering not only when reinforcement is available or unavailable, but also when aversive events may or may not occur (p 196-198).

1.3.14. The Competition Model

Sigal, I. E. (1991) defines competition model of learning as-The Competition model (Bates &MacWhinney, 1982,1987, 1989; McDonald 1989) details are possible way in which people deal with the linguistic role assignment problem. A central construct in model is *cue validity*. Cue validity, a term taken from Brunswik (1956), is a measure of the cue's utility in the categorization decision. As defined in McDonald (1986), the *validity* of a cue is the product of its applicability (the percentage of instances on which it is present) and its *reliability* (the percentage of time cue indicates the correct assignment when it is present). Thus cue validity is a measure of how often a cue indicates the correct assignment over the pool of instances. The order in which cues are initially acquired by learners depend on the validity of a cue in general in the language, that is its overall validity (p 385-397).

2. Conclusion

Therefore, the different theories of language acquisition explain the need for different approach towards learning and teaching. The oldest theories of learning such as Thordike's and Pavlov's are amongst the most practical approaches to learning. The information processing theory of learning is one of the latest addition to the literature.

These theories also record the growth and change in the perspective towards learning.

Although different approaches and terms are made popular from time to time, the genesis of learning theory is common to all. That is, learning is a mental process that requires effort and application. The varieties of learning highlights how an individual can learn better. The varieties of learning show the possible ways of acquiring a second language. Educators and learners alike can analyse and adapt the one that meets their expectations. For instance, a class that has majority of learners with concrete style of learning can follow experiential learning. Similarly, teachers can choose the variety of learning that suits the learner demands in a better way. Thus this paper has tried to present a review of literature related to theory of learning and varieties of learning. The varieties of learning such as competition model, automacity learning and discriminatory learning are for advanced learners who can understand the principle behind such unique varieties of learning. Such varieties of learning are useful not only I second language acquisition but also in higher orders of learning.

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