

**EXPLORING THE CREATIVE AND EMOTIONAL DIMENSIONS OF
LEARNING IN PSYCHOLOGY: A CRITICAL REVIEW**

Dissertation submitted to Jawaharlal Nehru University

In partial fulfillment of the requirement

For the Award of the Degree of

MASTER OF PHILOSOPHY

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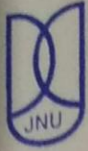
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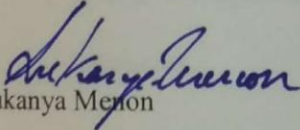


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DECLARATION

I declare that the dissertation titled "**Exploring the Creative and Emotional Dimensions of Learning in Psychology: a Critical Review**" submitted by me in partial fulfillment of requirements for the award of the degree of **Master of Philosophy** to Jawaharlal Nehru University is my own work. It has not been previously submitted for any other Degree of this or any other University.

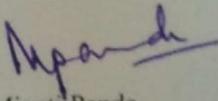

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CERTIFICATE

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Introduction

Learning theories in psychology have traditionally underemphasized the creative and emotional dimensions of learning processes. This study undertakes a critical review of the existing literature in psychology to show how the process of learning is simultaneously creative and emotional. The early conceptualizations of learning in psychology failed to foreground learning and the motivation to learn in emotion and creativity. Research in teaching of psychology is briefly reviewed to show that creativity in regular classrooms is considered to be a mere add-on to teaching-learning practices and that emotion gets considered as a mere factor that influences learning.

It is here that the cultural psychological view is introduced to show how learning, creativity, and emotion cannot be separated from each other. The study takes the help of Lev Vygotsky's Cultural-Historical Psychology to explicate the creative and emotional nature of learning. The discussion of what constitutes the interpsychological plane and the mediated nature of human cognition and learning helps place learning, creativity, and emotion as an integrated whole.

For early behaviorists, conditioning was the sole basis of learning. Learning was seen as mere habit formation controlled by stimuli and responses. John Watson (1913) banishes image and affective elements from the realm of learning since these psychological domains as well as the processes related to this domain are not open to an objective investigation. In Edward Thorndike's theorization, creativity and emotion find no place in discussing learning as learning is a process of stamping in behavioral patterns. Hull and Spence (as seen in Mowrer & Klein, 2014) go a little further to show the role played by drive and motivation in learning. They, however, continue to explain learning through conditioning and the temporal association of other factors that help in strengthening the associations. B. F Skinner makes it very clear that ideas and feelings have no role in deciding behavior which according to him is a product of learning. Therefore he emphasizes that these two factors cannot explain human behavior. In Skinnerian behaviorism, even language is a learned behavior, showing that there is no room for creativity here whatsoever. Noam Chomsky's criticism of Skinnerian behaviorism gives us enough reason to think about bringing creativity into the realm of learning in psychology. Chomsky (Chomsky, 1959) points out very clearly that there is a creative element in language acquisition when he

observes that from a limited set of observed utterances, human beings are capable of producing an infinite number of complex new utterances that are directly acceptable to his fellow members of the speech community.

Bandura (1971) said that even without numerous trials and errors, we learn large units of behavior vicariously. Although Bandura explains learning and symbolic representations essentially through conditioning, when he says that we symbolically represent external influences and later use these representations to solve problems symbolically (Bandura & Walters, 1977), one can infer that there is a creative, transformative process at work in learning.

From a Gestalt psychology perspective, Kohler demonstrated that by constantly engaging with the material, it is possible to suddenly find the associations or patterns in the material and thereby learn. Also once a pattern is learned the individual will use the pattern to solve similar problems (Ogden, 1932). This theory suggests that learning could be an active and creative process. Kohler's ideas mainly came from his research work on the behavior of apes, and there is hardly any mention of an emotional side to learning. Even Gestalt theorists fail to move beyond immediate experiences and deal with the imaginative and creative side of learning sufficiently, though they acknowledge the role of imagination in learning.

Jean Piaget (1963; 1967) did not limit his theory to learning alone nor did he theorize learning as an isolated domain. He treats learning as a fundamental part of human development. Creative thinking figures in Piagetian conception of learning. His concepts, especially his ideas of cognitive structuring and restructuring, discovery learning etc have clear creative bases (Ayman-Nolley, 1999). In a cognitive encounter with the environment, child's existing cognitive structures transform into new structures to accommodate new events (Flavell, 1963; Piaget, 1963; 1967). Piaget showed that the mechanisms of intellectual development, accommodation, and assimilation, are also the basis of creative process. Piaget's conception of reflective abstraction, where higher level schemes get formed through work on internal thoughts from lower level schemes forms the basis of creative thought process (Ayman-Nolley, 1999), points us to creative nature of learning. We can safely infer that Piaget did not consider the process of construction of knowledge very differently from that of creativity. Piaget's theory for the first time introduces the role of emotions in learning. He emphasizes that affect is the causal force that initiates cognitive functioning and decides the selection of knowledge (Piaget, 1981).

Creativity and learning, however, are seen to be separated in the goals of pedagogy, Nurturing creativity are never a major concern in the mainstream academic curriculum (Beghetto, 2010). In most educational projects, creativity remains an add-on activity to mainstream pedagogy. Cross (2012) and Lobman (2010) show that for curricula in Australia and America consider creativity as only a supplement to core pedagogy. Creativity gets considered as the monopoly of those who are 'gifted' and 'talented' (Beghetto, 2010). Such practices impoverish the educational experience of children (Lobman, 2010) and limit the opportunity of nurturing creativity to a small fraction of the population (Beghetto, 2010). Modern education characterizes significant tension between creativity and learning (Marjanovic-Shane, Connery, & John-Steiner, 2010) since the theories that inform teaching and learning do not emphasize creativity to a significant extent.

In this context, it is necessary to have a learning theory that is inclusive, and that explains the emotional and creative nature of learning. This study brings in Lev Vygotsky's theory to broaden the debate of learning. Vygotsky's theory is also not limited to learning and deals with the entirety of human cognition. Vygotsky's theory of learning and development centers on creative imagination. Imagination helps us widen our experiences and the scope of learning by allowing us to conceptualize something we have not directly experienced (Vygotsky L. S., 1990). The new experience and cognition are products of combinatorial activities of human imagination that builds on everyday experiences and knowledge. Imagination serves as the basis for any intellectual activity. Also, according to Vygotsky, learning operates in a Zone of Proximal Development which is a social relational zone (Holzman, 2010). The tensions created in this dialectical plane result in new learning. As the subject learns in interaction with the more able peers and adults to employ, revise or improvise the cultural tools as well as knowledge in this zone, a complex inter-subjective plane gets created. The subject learns by investing his/her own emotion and self. Such a socio-cultural perspective gives learning a holistic nature. A critical review of Vygotsky's works is therefore undertaken to explore the creative and emotional dimensions of learning and to understand whether there is a need for meta-theoretical work incorporating these dimensions of learning more explicitly.

The rationale for the study:

A visible absence or inadequate inclusion of creativity and emotion in explaining learning is one of the major reasons for undertaking this review work. Behaviorism leaves no room for creativity and emotion in the process of learning. The role of flexibility, imitation, symbolic representation and motivation becomes clearer with the advent of cognitive dimension in behaviorism. Gestalt theories on learning shift the focus from acquired learning to something that gets actively experienced and perceived, thereby helping us see implications of creativity here. Piaget's theory brings both creativity into the discussion of learning and development. Piaget's works on child's play brings in the dimension of emotion but fails to weave the narratives of learning, emotion and creativity. Therefore there is an increasing realization of the role of creativity in the process of learning. But, even in Piaget's theory, creativity remains limited to an individual and does not come to a dialectic plane. Review of research in pedagogy also shows a widespread segregation of learning and creativity in pedagogic research and practices.

The concept of emotion also inadequately features in the literature on popular learning theories in psychology. Watsonian behaviorism makes sure that affect has nothing to do with learning. The scenario changes when Skinner acknowledges emotions in the process of learning, but emotion remains a product of learning and has no role in the process of learning. Neither cognitive behaviorist theories nor Kohler's gestalt theory discusses emotion in their narrative of learning. We see a need to look into emotions while researching learning when Piaget says that affectivity gives the impetus for learning. But again, learning here is not affected by emotions in any way. Review from pedagogic research indicates that emotions need to get considered while researching classroom learning. But, in popular curricula, emotions get to be seen as something from outside that 'influences' learning. Although the involvement of emotions in learning gets acknowledged, it is not clear how emotions are involved in the process of classroom learning.

Literature from learning theory as well as pedagogic practices are increasingly becoming aware of the implications of creativity and emotions in learning, but there is not enough explanation as to how these concepts are involved in the learning process. Also, review shows that theories become capable of including creative and emotional dimensions of learning when they become more holistic and start seeing learning and cognitive development as part of a larger process.

Therefore, the need for a holistic theory through which learning can be integrated with creativity and emotion arises. The search for such a theory in the psychology literature leads us to Cultural-Historical Psychology, the only framework so far, that engages in a dialectic plane, where the discussion of learning takes into consideration its relationship to emotion and creativity.

Research Objective:

To explore the creative and emotional dimensions of learning in Psychology.

Research questions:

1. Is learning a creative process? How does learning become a creative process?
2. Is learning an emotional process? How are emotions implicated in the learning theories?
3. Is there a need to theoretically integrate learning with creativity and emotion?

Chapters:

Chapter 1

The era of stimulus- response theories: Searching for the scope of creativity and emotion within behaviorist theories of learning:

This chapter critically reviews the literature of the initial learning theories, more precisely behaviorist theories to find the emotional and creative dimensions of learning. Literature from behavioristic theories is critically analyzed to show the segregation of learning, creativity, and emotion prevalent in large part of psychological literature produced within this paradigm. The behavioristic view of learning will be reviewed emphasizing on its main proponents, Watson, Thorndike, Hull, Spence and Skinner. Chomsky's criticism of Skinner and behaviorism will bring out the limitations of behaviorist view of learning.

Chapter 2

Cognitive Behaviorist, Gestalt, and Piaget's Developmental Theory: Learning begins to find its creative and emotional dimensions

The increasing realization in the field that learning has an active creative and emotional elements gets explored through the cognitive and social cognitive elements emerging in Tolman's and Bandura's theories. Kohler's view from Gestalt psychology will be brought in to show the creative ability of humans to see causal configurations by seeing patterns through experience (Waller, 1934). The realization that creative side of learning comes forward only when it's interrelationship with the larger human development comes through the work of Jean Piaget. His concepts of cognitive restructuring and reflective abstraction are used to point to the need to acknowledge emotion and creativity in learning (Ayman-Nolley, 1999). Research from pedagogy is also reviewed to show inseparability of these three concepts. Patterns of Popular Psychology textbooks are reviewed to show the segregation of learning, creativity, and emotion which prevails even in mainstream psychology education. Also, the tension in modern education resulting from the separation of learning and creativity is discussed and reviewed. Research from psychology pedagogy and textbooks is reviewed to show how creativity becomes an add-on activity in modern education. This chapter would also aim at delineating the creative dimensions of learning.

Chapter 3

Exploring the creative and emotional dimensions of learning through Cultural Historical Psychological theory

This chapter engages critically with the writings of Vygotsky and some of the post Vygotskians. The central concepts of Vygotsky's theory of human development such as mediation, meaning making, the concept of ZPD, play, imagination, *perezhivanie* and catharsis are critically discussed to show how his theory explicates the emotional and creative dimensions of learning. The works of Vygotsky, Leont'ev, Connery, John-Steiner, Marjanovic-Shane, Ferholt, Holzman, and Smagorinsky get reviewed in this chapter.

Chapter 4

Conclusion

This review would conclude by arguing that learning is essentially a creative and emotional process and that it can be understood so only when it does not get seen as an isolated process, but

as a process that has intricate interconnections to and depend on larger social, developmental process. Drawing on the reviewed literature, an attempt is made to suggest the need for theoretically integrating learning, emotion, and creativity.

Chapter 1

The era of stimulus-response theories:

Searching for the scope of creativity and emotion within behaviorist theories on learning

When theory and method limit each other: Searching in vain for creativity and imagination in Thorndikian connectionism

Popular theories of learning in psychology have not given creativity or emotion a legitimate place within their realm. One of the earliest theorists to study the process of learning was Edward. L. Thorndike. Although Thorndike's explorations began with inspiration from William James' dynamic psychology and aimed at exploring human consciousness, his search soon lead him to a mechanistic connectionism (Thorndike, 1905).Thorndike's work that began in comparative psychology has contributed to the early understanding of learning. He initially experimented on animals, but with the aim of finding the origin of human faculty. He believed that human consciousness and cognition arises out of associative processes. He derided the notion of reason and believed that human beings hardly reasoned. Instead, he believed that the chain of ideas in human beings is mainly the result of associations (Thorndike, 1911). Since his theory was a result of his disagreement with explaining problem-solving with deliberation and reasoning, one does not see much of a scope for agency or flexibility. He saw learning as a certain modifiability for which an explanation by the mere frequency of occurrence does not suffice (Thorndike, 1927). When he says modifiability one expects a scope for creativity and agency, but we are in for a disappointment because the agent of the modification here is the effect of an association and not the individual. He explained learning mainly by the law of effect. According to this law learning proceeds by forming modifiable connections. The after-effects of a connection influence the same connection by working backward on it and most importantly if a satisfactory state follows the connection, this state would strengthen the connection. Influence of this positive state of affairs or reward can also spread to nearby connections. He believed this law could successfully contend purposivism in psychology (Thorndike, 1933). When learning is rendered purposeless, any scope for agency or creativity dies. In Edward Thorndike's theory, learning gets reduced to a process of 'stamping in,' the mere stimulus-response connections

formed as a result of the effect of the consequence. Thorndike's Connectionism paved the way to further mechanization of learning in behaviorism because response formation is automatic and does not require awareness from the part of the organism (Mowrer & Klein, 2014). When the individual's awareness and agency gets considered unnecessary for the process of learning, his emotions certainly cannot have an active role in the process of learning. Although Thorndike engaged with the question 'what do they feel?' (Thorndike, 1911) in his early experiments with animals, he does not engage with emotions in his discussion of connection formation.

An analysis of one of his many experiments which were conducted to study the law of effect shows how his theory and methods of the study limit the explanation of human learning (Thorndike, 1927). In one of his experiments, the 'effects' used were the words 'right' and 'wrong.' The experimental set up is narrated by Thorndike as follows:

A series of 50 strips of paper, two of every unit length between 3 and 27 cm, and alike in every respect except length, was presented on a fixed background in a random order. The S, who had before him a strip 10 cm long and known by him to be 10, estimated the length of each strip in integral numbers. The 10-standard was kept fixed in a spot to the right of the lengths to be judged. The S knew nothing concerning the constitution of the series of strips, save that they were all integral multiples of one-tenth of the standard. He never saw the strips except one at a time during the experiment (Thorndike, 1927, p. 213).

Thus, from the beginning of the experiment, it is seen that Thorndike's theoretical framework has influenced the way his study got designed. Since the 'effect' is the only factor that is considered to affect learning and since learning is considered a connection formation, the experiment gets designed in such a way as to let only the 'right and 'wrong' affect the subject. There is no option left for the subject to explore or manipulate for the theory does not believe that purposive action has any role in the learning process. Also, not much space is given for reasoning out. In the end, we find out that the effect or the satisfactory outcome seems to improve learning mainly because 'effect' is the only factor that is allowed to influence the process of connection formation and is the only factor that gets observed. Initially, 50 estimates were made by the subject. He did not receive any remarks about his estimations, and the only aid he received was the standard paper strip. Next, the subject was made to estimate a strip and as soon as he estimated, the experimenter gave feedback by saying 'right' or 'wrong.' He does not get any information regarding the direction or the amount of error. The strip got removed

immediately. The feedback was given approximately two seconds after the estimation. The author observes that satisfying connections get strengthened, and the estimates have visibly improved for experiments with 'right' and 'wrong' consequences with an average percent of the reduction in error 61. Thorndike goes on to say that "These experiments are crucial as a demonstration that the consequence of connection work back upon it to influence it. There was no difference between the 'aided' and 'non-aided' experiences save in the consequence of connections" (Thorndike, 1927, p. 215). Thorndike says that the subject had hardly any time to build an image of the strip or renew the connection in his mind. When Thorndike says that consequences of actions work back upon the same action to influence it, based on the experiment, we must look carefully at the experimental set up itself. The subject was not allowed to examine or manipulate the strips or the situation. He was not allowed to observe the strips according to his convenience. There was no way the subject could cross check his estimation or know the direction or extent of his error. The only information available was 'right' and 'wrong.' So although we see that the consequence affects the connection, it could also be because, throughout the experiment, the effect was the only factor that was allowed to influence the connection in any way. In fact, the entire experiment gets designed in such a way that only the consequence gets to influence the connection, and only this particular phenomenon gets observed (Thorndike, 1927). Such a tendency is understandable when we look at the theoretical presumptions. When the theory aims at countering purposivism, where learning is a connection formation which is dependent on the nature of the effect alone the experimental design inspired by the same theory would not consider leaving space for human agency, which it did not believe is significant. Only the nature of the effect gets observed. Therefore we see that the theory restricts the experimental design and this, in turn, strengthens the theory. When Thorndike says that the only difference between the 'aided' and 'non-aided' sessions are regarding their effects, this difference is significant because in the non-aided session subject's freedom was completely curtailed and in the aided session we can see his options widening. Also, is 'wrong' really a dissatisfactory outcome? Is it not another factor along with 'right' that helps the subject to estimate the length more accurately? So, did these 'effects' effect the connection because of their satisfactory or unsatisfactory nature or because they help make the learning process better by giving the subject more agency and information in the process? But Thorndike did not engage

with any such questions and therefore in his theory learning did not have an emotional or creative dimension.

A focused investigation of the process of learning in psychology began with behaviorism. In early behaviorism, learning was a mechanical process which was the mere result of conditioning (Watson, 1913; Skinner, 1968), and therefore human agency had no role to play in behaviorist view of learning. An analytical exploration into the nuances of various attempts at explaining learning in the behaviorist tradition is necessary to draw out their limitations in drawing out their limitations in bringing out the creative and emotional dimensions of learning and the reasons behind these limitations.

Whatever hope was remaining concerning human agency in Thorndike's theory seems to diminish in the hands of John Watson. Learning gets established as a central topic of inquiry in psychology by John Watson. He developed the field of behaviorism, and one of the main aims behind this endeavor was to bring the research on learning to the center of the field of psychology (Rilling, 2000). Watson strongly argued for limiting the study of psychology to elements that are available for empirical investigation. Therefore, he dismissed the concepts such as consciousness, image, etc. from the realm of Psychology itself (Watson, 1913), thereby denying any space to mental representations or creativity. For Watson, learning was synonymous to habit formation, and a habit is made entirely of conditioned reflexes. In fact, towards the end of his career, he was more comfortable with the concept of habit formation, and this term replaces learning in many of his later writings (Rilling, 2000). Learning by conditioning doesn't leave any space for creativity or imagination because; learning is considered automatic and is limited to stimulus, response and habit formation (Mowrer & Klein, 2014). In Watsonian behaviorism, learning is the basis of human behavior, although Watson acknowledges the existences of instinctive motivation and behaviors (Rilling, 2000). According to behaviorism, conditioning, either classical or instrumental is the basis for habit formation and learning. Classical conditioning is a mechanistic, involuntary learning where the organism learns to understand unconditioned biologically significant stimuli (UCS) and stimuli in the environment (CS) that would predict the UCS through repeated pairing of both UCS and CS. Instrumental conditioning, on the other hand, occurs when learning takes place through voluntary behaviors and their consequences (Mowrer & Klein, 2014). As we can see, when any new learning is just a

result of conditioning concerning stimulus, response, and consequence, the individual has no active role to play in the learning process, and therefore it would follow that neither does his creativity or emotions.

Watson considered image and affect as stumbling blocks in the way of establishing behaviorism (Watson & Reyner, 1920). Watson never talked about the implications of emotions in learning; instead, for him, affection was a sensation that can be peripherally investigated and most emotional responses get acquired by conditioning (Rilling, 2000). Watson predicted that emotional reactions are conditioned and with his controversial experiment on little Albert, established it (Watson & Reyner, 1920). But he never talked about the implication of emotions in learning. Reviewing one of Watson's major experiments shows how Watson's theoretical framework prevents him from seeing the role of creativity and emotion in the process of learning. Watson and Reyner(1920) states at the beginning of their article which explains their study on the conditioning of emotional responses that Albert(the subject of this experiment), at nine months of age was stolid and unemotional, generally (Watson & Reyner, 1920). They mention that this stability was the primary reason why he got selected as the subject of the study. To reach this conclusion, Albert got administered a series of emotional tests where he got suddenly exposed to a series of stimuli. None of these exposures called out fear from Albert. Also, his mother and other attendants from the hospital where he grew up corroborated these results. Therefore they begin with the assumption that a child can be 'unemotional and associates stability with an unemotional state.

The fear response was seen from the child only when he got exposed to loud sounds (Watson & Reyner, 1920). The study tried to see if individuals learn emotional responses through conditioning by experimentally testing whether the child's fear of loud sounds can be used to condition fear of another stimulus. The experiment started when the child was eleven months old. From the beginning of the narration of the experiment, we see that the child is not passive in the experimental environment but active: "The white rat suddenly taken from the basket and presented to Albert. He began to reach for the rat with his left hand" (Watson & Reyner, 1920, p. 2). In this trial, the loud sound coincided with the child's touching the rat. The child was disturbed, jumped violently and started crying. In the next trial (after 11 months 10 days)

Rat was presented suddenly without sound. There was steady fixation but no tendency at first to reach for it. The rat was then placed nearer whereupon tentative reaching movements began with the right hand. When the rat nosed the infant's left hand, the hand was immediately withdrawn. He started to reach for the head of the animal with the forefinger of the left hand but withdrew it suddenly before contact (Watson & Reyner, 1920, p. 3).

Watson and Reyner go on to say that “It is thus seen that the two joint stimulations given the previous week were not without effect” (Watson & Reyner, 1920, p. 3). But when we read the narration of the trial we can see instances that lead us to suspect whether the child’s fear responses were simply conditioned. The “steady fixation, but no tendency at first to reach for it” (Watson & Reyner, 1920, p. 3) and “the tentative reaching movements” (Watson & Reyner, 1920, p. 3) that began when the rat got nearer could be indicators that the child tried to make sense of the situation. Therefore Albert could not have been passive through the experiment and suggests the involvement of some inner psychological process. We could say that the child is creatively moving his hand according to his interaction with the rat. Also, we begin to see that although the fear was beginning to be learned, or conditioned as Watson and Reyner says, as seen from the child's wary movements and withdrawal, the emotion of fear was later beginning to influence the child's explorations and movements as seen from the same movements. Therefore the role of emotions in learning might not be as simple as behaviorists tried to say. In the same trial, the child received more joint stimulations, and at the end, the rat got presented alone. The child immediately cried, turned away, fell over and crawled away rapidly (Watson & Reyner, 1920).

But some questions can be raised here: Did the child cry because the fear simply got conditioned to the rat or did he also learn to expect a scary sound when the rat was around? Can falling over and crawling away be considered simple fear responses or creative ways the child found to move away from the scary stimulus? Was fear a mere conditioned response here or did it not also influence the escape behavior? Signs of expectation, curiosity, manipulation, etc. are seen in the very experiment that was used to explain learning as the result of conditioning, or more specifically, that emotional responses are conditioned. But emotions can be suspected to have a more complex relation to learning because, it seems, from Watson and Reyner’s narrative that emotions while being learned also guide the process of learning.

The second part of the experiment explored whether the emotional response that is conditioned to the rat gets transferred to other stimuli (Watson & Reyner, 1920). First Albert got tested with playing blocks to which he reacted normally. He played with the blocks, and it that no general transfer of the emotional response (i.e. to the room, blocks, etc.) has happened. Also when presented with rat alone, fear response was shown again. From this, it got inferred that the conditional response to the rat had carried over through the five days gap. Exploring whether conditional emotional response gets transferred, the child was tested with rabbit, dog, fur coat, cotton wool and Santa Claus mask respectively. Although each of these stimuli brought out obvious fear responses, we can sincerely doubt if it was just a simple transfer because the child's response to each stimulus was different. The rabbit brought out a violent fear response while the response to the dog was less violent. The fur coat also brought out severe fear responses (Watson & Reyner, 1920). The reaction to the cotton wool gives us room to doubt that the process of transfer could be more than S-R conditioning –

The wool was presented in a paper package. At the end, the cotton was not covered by the paper. It was placed first on his feet. He kicked it away but did not touch it with his hands. When his hand was laid on the wool, he immediately withdrew it but did not shock that the animals or fur coat produced in him. He then began to play with the paper, avoiding contact with the wool itself. He finally, under the impulse of the manipulative instinct, lost some of his negativism to the wool (Watson and Reyner, 1920, p. 4).

Here we see instances of observation, discrimination, manipulation, and agency. Therefore transfer of conditional responses could be influenced by the active manipulative skills of the individual. The Santa Claus mask presented at the end also called pronounced negative responses from Albert. All these get taken as proof of emotional transfer. Apparently learned emotional responses get transferred to other stimuli also (Watson & Reyner, 1920, p. 3). But, if this is just conditioned transfer, why did the child respond remarkably differently to each stimulus. Does it not show a certain discriminatory power and agency? Also, is the fear merely getting transferred or is the learned emotion of fear influence the judgment and reaction to other stimuli and thereby the transfer itself?

A couple more instances of agency and active manipulation shows in the description of Watson and Reyner. The following instances are from the notes from the same study conducted at the end of the experimental period:

Fur coat. Wrinkled his nose and withdrew both hands, drew back his whole body and began to whimper as the coat was put nearer. Again there was a strife between withdrawal and tendency to manipulate. Reached tentatively with the left hand but drew back before contact had been made (Watson & Reyner, 1920, p. 6).

The rat. He allowed the rat to crawl towards him without withdrawing. He sat very still and fixated intently. Rat then touched his hand. Albert withdrew immediately, then drew back as far as possible but did not cry (Watson & Reyner, 1920, p. 6).

The rabbit. The animal was placed directly in front of him. It was very quiet. Albert showed no avoiding reactions at first. After a few seconds, he puckered up his face, began to nod his head and to look intently at the experimenter. He next began to push the rabbit away with his feet, withdrawing his body at the same time. Then as the rabbit came nearer he began pulling his feet away, nodding his head, and wailing "da-da". After about a minute he reached out tentatively and slowly and touched the rabbit's ear with his right hand, finally manipulating it. The rabbit was again placed on his lap. Again he began to fret and withdrew his hands. He reached out tentatively with his left hand and touched the animal, shuddered and withdrew the whole body" (Watson & Reyner, 1920, p. 7).

These instances also give us hints into the presence of agency, conscious manipulation, and judgment throughout the experiment. But, Albert's response through the experiment is taken by Watson and Reyner as conclusive proof that directly conditioned emotional responses as well as those conditioned by transfer persist.

After going through the experimental report, we can safely doubt whether the experiment was as simple as the explanation Watson and Reyner seems to provide. But the reason for their interpretation and the ensuing conclusion is obviously coming from their theoretical presumptions. If you approach this experiment from a premise where the concepts of autonomy, self, mind, and cognition do not exist, emotions will get reduced to 'emotional responses' and manipulations would be reduced to 'instincts' and in short, the individual will not have much say in the process of learning. Although hints toward agency, creativity and analytical thought are scattered all over the experiment, they would be invisible as long as you approach it with a theoretical framework which does not even acknowledge the presence of consciousness, mind or cognition. We can infer that when a theory takes into consideration only the environment and behavioral outcomes, it will not be able to hold creativity and emotion in its folds.

Watson's own words render images and imagination out of the boundaries of psychology, let alone learning:

Closer examination leads me to deny in my own case the presence of imagery in the Galtonian sense...imagery becomes a mental luxury (even if it really exists) without any functional significance whatever...I should throw out imagery altogether and attempt to show that practically all natural thought goes on in terms of sensorimotor processes in the larynx (Watson, 1913, p.816).

We can see that Watson had to struggle to leave images out of habit formation and substitute them with physiological aspects when he says, “The individual is always examining objects, in the one case objects in the now accepted sense, in the other, their substitutes, viz., the movements in the speech musculature” (Watson, 1913, p.816). But he did struggle and managed to keep them out.

Hull, Spence and the introduction of motivation and drive in learning theory: learning becomes more flexible:

The scope of human agency and flexibility in learning theory improves with the introduction of the concept of motivation to the scene in the works of Clark S. Hull. Although Hull's model also centers on conditioning, he took learning beyond stimulus–response linkages and explained that habits or stimulus-response linkages could direct behavior but, cannot energize them. According to him the source of any behavior is a physiological deficit or disequilibrium. This deficit would initiate behaviors from the organism that would result in need. Unsatisfied needs produce a drive which would instigate the individual to behave. This behavior would aim at bringing back the equilibrium. Need and the resulting drive leads to the display of prior associations (See Graham& Weiner, 1996). Along with such innate drives, environmental cues that get associated with stimuli that induce internal drive, get classically conditioned and generate the drive by themselves. Also, the reward magnitude contributes to learning. The reward magnitude causes incentive motivation. The incentive motivation together with drive motivation affects the intensity of the instrumental behavior (See Mowrer& Klein, 2014). Therefore although learning is found to have more dimensions, it is still a formation of linkages. The individual agency remains elusive since any behavior gets reduced to biology. Again there is no role for creativity in the process since Hull considers the drive to be nondirective. It could only evoke dominant associative linkages in the organism's habit structure. Although the need for a bigger canvas for explaining learning arises from this theory with the concept of drive, it does not yet reach the level of emotions. Scope for seeing any creative

dimension to learning gets further limited when Hull explained the relationship between habit and drive in a mathematical formula: Behavior= Drive*Habit (See Graham& Weiner, 1996). In such a multiplicative relationship, as long as there is no biological disharmony, no behavior can occur.

Agency and flexibility get more scope when Spence explains that from an incentive we develop an internal goal response which in turn develops an internal stimulus state and this motivates behavior (See Mowrer & Klein, 2014). Spence extended Hull's idea of incentive motivation. He says that reward generates an internal goal response which in turn develops an internal stimulus state which motivates behavior toward stimulus (Mowrer & Klein, 2014). Again the basic principle underlying the theory is conditioning. Once again creativity and cognition are sidelined and apparently the only role played by the individual in learning is to act and then be a slave to the consequences of the act. Drive theory edges closer to emotion with the work of Spence. Spence and Colleagues studied the influence of anxiety level on learning. Anxiety was considered an emotional drive. They found that scores on anxiety scales could help understand drive levels. In their experiments, they checked drive theory with simple as well as complex verbal tasks. In a simple task, the required correct response is dominant in an individual's response hierarchy. Complex tasks ask for competing response tendencies (Graham& Weiner, 1996). Spence found that when the task is simple, anxiety energizes more correct responses and when the task is complex, anxiety increases the tendency for incorrect responses (Scovel, 1978). Here we see that anxiety has a role to play in learning, but Spence does not consider anxiety as a feeling component, but as an emotional drive which arises from physiological disharmony.

Learning devoid of agency or flexibility: search for emotion and creativity in learning theory of Skinner

B. F Skinner further establishes the conditioned nature of learning and explains that teaching is nothing more than the arrangement of contingencies (Skinner, 1968). The epitome of behaviorist view of learning shows in the works of Skinner. He took the scientific rigor of behaviorism to new heights and established more control over experimental studies of learning. While Watson reduced processes such as sensation, perception, and imagination into bodily events, Skinner went further to say that these bodily events themselves are conditioned by

external stimuli (Blanshard & Skinner, 1967), thereby relieving human beings of any agency on her behavior.

Although Skinner takes behaviorism to a mechanical extreme; he does not question the existence of feelings. But again, the role of emotions in learning gets limited when he maintains that feelings have no causal role in behavior (Creel, 1980). Skinner does acknowledge the concepts of ideas and feelings but makes it clear that ideas, motives, and feelings have no role in deciding behavior and therefore cannot explain it (Blanshard & Skinner, 1967). According to Skinner, covert responses such as feelings do not cause overt responses; instead, both are products of common variables (Creel, 1980). He explicitly states that “There is no important causal connection between the reinforcing effect of a stimulus and the feelings to which it gives rise” (Skinner, 1971, p. 107). But the scenario becomes more hopeful since feelings start to be discussed in narratives on behavior even though they play no causal role in behavior.

Agency, as well as emotions, is undermined when Skinner says that freedom is to do with contingencies of reinforcement and not the feelings generated by these contingencies (Skinner, 1968). According to him, a feeling is not the reason why a person behaves to get what he wants. He believes that to understand the real causes of human behavior, we have to dispossess man of his autonomy. Skinner shifts the functions of autonomy to environmental contingencies and maintains that environment acts upon the individual, but the individual does not act upon the environment. But in writings of Skinner himself, we can find instances that make us doubt whether this is the case. When Blanshard asks whether man then becomes a passive observer or victim of what is happening to him, Skinner says that even though man gets controlled by his environment, the environment is mostly his creation. Even though this shows us that there is creativity in man's behavior and learning and that both environment and man influence each other, this does not show in Skinner's theory. He believed that even the previous behaviorist theories were incomplete and resorted to contingencies of reinforcement for explaining learning (Skinner, 1968). Contingency, according to Skinner is the connection between behavior and its consequence and is established by the environment (Mowrer & Klein, 2014). For Skinner, teaching is all about arranging reinforcement contingencies. Complex behaviors get attained through progressively changing contingencies of reinforcement in the direction of behavior required. In Skinner's own words, “The child must acquire responses of transposing, clearing

fractions, and so on, which modify the order or pattern of the original material so that the response called a solution is eventually made possible” (Skinner, 1968, p. 90). But, Skinner shows that a creative modification of the original material is involved in learning. Skinner, although still prefers to explain learning through external behaviors and reinforcements (Skinner, 1968). A complete absence of consideration of creativity shows when we see that Skinner avoids using the word “imagine” and insists on using “see.” Since we “see” even in the absence of the stimulus, may be “seeing” is a response that is conditioned to act in the absence of normal stimuli. Skinner says that we do not imagine. Instead, we reinstate some discriminate stimuli and antecedents to which we respond in seeing that object and in doing so, we reinstate seeing that object. No copy of external world gets created within the individual (Blanshard & Skinner, 1967).

We can see that there remained absolutely no space for creativity in behaviorism when Skinner reduced even language to a form of verbal behavior. He did not believe in the concept of ideas and maintained that verbal behavior is not our instinctive capacity for expressing ideas but just an operant response controlled by contingencies (Mowrer & Klein, 2014). Skinner’s writing on language gives us reason to suspect the role of creativity in understanding and learning (Skinner, 1957), although Skinner himself has not looked at learning or understanding from this point of view. Skinner explains that our understanding of language depends on our tendency to act. Apparently, verbal environment consists of contingencies, and our verbal responses are in accordance to our previous exposure to these contingencies. We cannot respond to verbal stimuli to which we have not got exposed. Skinner says that when we read a passage, the verbal stimuli lead us to emit the same response of the author all over by ourselves. The more similar our responses are, the more we understand (Skinner, 1957). Thus, if each time we try to understand something, we have to act it out all by ourselves, all over again, isn’t there an element of construction and creativity involved? Are you not creating while you understand?

Agency, brain, and creativity in learning: Chomsky's criticism of Skinner

Some of the intense criticisms towards Skinner’s views on learning and behaviorism as a whole throw light onto the impracticality of separating learning from the individual and her creativity. Chomsky criticized Skinnerian behaviorism by showing how the development of a complex linguistic repertoire in children defies explanation by mere association (Chomsky,

1959). It is rather the ability of the brain to create while learning makes it possible for a child to develop complex language system. One of the most violent and enlightening criticisms of Skinner and behaviorism was from Noam Chomsky. Chomsky asserted that human behavior, especially verbal behavior is extremely complex, and to study this behavior, the study of external stimulation will be far from enough and that there is a need to look into the internal structure of the organism and its capacities. Chomsky points out that we will never know the stimuli that elicited speech until the person responds and therefore we will never be able to predict verbal behavior according to environmental stimuli. He takes the example of proper nouns to show that we use words even when the corresponding objects have not stimulated us to do so. Chomsky points out the cases where learning is its own reward and says that to talk about cases like these where external reinforcement is not necessary, we will have to take into consideration curiosity, manipulation and exploration drives. His criticism makes it clear that language learning is not dependent on reinforcement contingencies. We can see, even though indirectly, the role of creativity in learning when Chomsky says that children acquire language by observing and imitating others.

As far as acquisition of language is concerned, it seems clear that reinforcement, casual observation, and natural inquisitiveness (coupled with a strong tendency to imitate) are important factors, as is the remarkable capacity of the child to generalize, hypothesize, and “process information” in a variety of very special and apparently highly complex ways which we cannot yet describe or begin to understand, and which may be largely innate, or may develop through some sort of learning or through maturation of the nervous system (Chomsky, 1959, p.16).

Chomsky points out doubtlessly that there is a creative element in language acquisition when he observes that from a limited set of observed utterances, human beings can produce an infinite number of complex new utterances that are directly acceptable to his fellow members of the speech community (D’Agostino, 1984).

Summary:

Reviewing connectionist and behaviorist theories lead us to see that these theories, which still holds much power over our education systems, have consistently denied creativity or emotion any place in their explanation of learning. Since these theories are only preoccupied

with the role of the limited variables that they believe will influence learning, their experiments get designed in such a way as to let only these particular variables change. Therefore there will not be any scope for finding any other aspect that influences learning, let alone emotion and creativity. These theories and their methods handicap each other and prevent themselves from moving forward. Chomsky's criticism of Skinner brings to light the faults that are holding behaviorism back and by showing how language acquisition is a creative process, gives us reason to enquire more on creativity's role in learning. The Review shall be taken forward to explore the changing nature of learning in psychology while searching for the scope of creativity and emotion in learning.

CHAPTER 2

Cognitive Behaviorist, Gestalt, and Developmental theories:

Learning begins to find its creative and emotional dimensions

Learning becomes purposive and cognitive: Tolman and field theory

Tolman's emphasis on the flexible nature of learning and the agency of the learner created a departure from the classical understanding of learning. He proposed that behavior is purposive and gets flexibly directed by motivation and expectancies (Mowrer & Klein, 2014). According to him behavior is purposive and is always directed towards a goal. But he refrained from saying that the individual is aware of the goal. He did not consider the individual powerless in the environment. Instead, organisms are considered able to learn the structure of their environment. The environment has many cues which signify the location of goals. The organism achieves the goal by learning these environmental cues that would lead to punishments or rewards. Tolman did not consider reward necessary for learning; instead, there is an expectancy towards the goal which is created by motivation. Motivation creates a tension that demands the goal and directs behavior towards the goal (Mowrer & Klein, 2014). But in Tolman's view, unlike previous behaviorist views, there are no stereotyped patterns of behavior that would reduce the tension. Instead, the motivation and the expectancies direct the behavior flexibly. Although behaviorist in many ways this theorization gives us the hope that learning involves the individual's contribution to a significant extent.

Tolman and the field theorists created a definite departure in the classical understanding of learning. In Field Theory, clearly, behaviorism starts losing its linear S-R nature of learning and starts recognizing the autonomy of the individual. Tolman stresses the importance of intervening brain processes between stimuli and responses. He maintained that these intervening processes are far more autonomous, patterned and complicated than traditional behaviorists would admit. We have autonomy even in selecting the stimuli. The role of cognition emerges through the works of Tolman and the field theorists and the process of learning start to be seen from a wider perspective (Tolman, 1948). The learning scenario takes a significant turn, and the

space for creativity and emotion in learning started slowly emerging when Edward Chase Tolman brought into the notice of psychologists that behavior is both cognitive and purposive. He explains the cognitive and purposive nature of learning through goal-objects, means-objects, and means-end- relations. Needs create demands in individuals, and they are ready to commerce with both the end that satisfies the need and the means with which she can explore to reach the end. Clearly, this readiness is judgmental and not mechanical or passive, showing us that learning is evidently more than S-R connections. Here learning is a means-end judgment that becomes more and more specific with experience (Tolman, 1951). Based on their studies on rats, Tolman says that learning progresses by forming cognitive field maps of the environment in the brain. We can suspect the emergence of the role of creativity when Tolman says that the connection between stimuli and response is not simple, but the incoming stimuli are processed and elaborated in the brain to form a 'cognitive-like map' of the environment. The cognitive maps can be narrow and strip like or wide and comprehensive involving a wider representation of the environment. The wider maps are more adaptable to new situations and get carried over more frequently to new situations. Learning becomes a process where the individual is actively engaged when Tolman says that the process of creating cognitive maps is a selective and active process. Our hope of finding creative dimensions of learning is heightened when through an experiment by Tolman, Ritchie, and Kalish (1946) as narrated by Tolman in 'Cognitive Maps in Rats and Men'(Tolman, 1948), we see that as the theory gets wider and experiments more intricate, we begin to see the involvement of cognition and agency in the process of learning. The first part of this experiment got conducted in a simple maze- which consisted of a single passage including a circular table. The path ended in a lit food box. The rats learned to run directly from the beginning of the maze to the end where food was kept, after four nights of three trials each. Now, the second part of the experiment brings out the cognitive nature of learning. After four days, the maze got changed into a sun burst. The starting path got blocked, and there were a series of radiating paths included. When the rats found that the earlier path got blocked, they explored all the available pathways, clearly showing that learning is an active process. They ran only a few inches into each path and finally ran fully through paths that were close to the food. Most rats preferred a path just four inches in front of the point where the food box was. Another noticeable tendency was to choose the path that perpendicularly pointed to the side of the maze where the food had was. So it is obvious that the rats are not associating a single path to food, but

as Tolman concludes, through training in a narrow strip map they did not acquire narrow strip map, but a wide comprehensive cognitive map that locates food in space. Therefore it is obvious that learning process is flexible and learning in one situation can be generalized to other more complex situations. Therefore we can reasonably suspect that learning is not a one to one S-R pairing but a much more complex phenomenon and that this cognitive map making where limited experience can be processed to form more comprehensive views should involve imagination and creativity (Tolman, 1948). Tolman comes directly to the involvement of creativity in learning when he talks about the concept of 'learning by means of inventive ideation.' When Tolman says that creativity or the capacity to actually or ideationally bring out new behavior is a fundamental requirement for inventive learning, he very clearly paves the way for creative dimensions of learning because here creativity is an essential dimension of learning. The essence of inventive learning lies in the "organism's hitting upon some wholly new aspect of the field – in his bringing into play some new manner of differentiation and prediction, in a manner never applied by him before to that particular situation"(Tolman, 1951, p.371). But unfortunately, for Tolman creativity is necessary only for inventive learning.

Insight into the role of emotion in learning becomes available when Tolman says that in an intensely frustrating or strongly motivational condition, the building of a comprehensive cognitive map could be hampered (Tolman, 1948). But even then, he does not accept the existence of any psychological mechanisms. According to Tolman, several of our social and individual maladjustments are due to narrow cognitive maps some of the reasons of which being intense frustrations and motivations. Tolman equates comprehensive cognitive maps to 'required rationality' and suggests that to achieve this required rationality, world planners of the future and child trainers to advocate broad cognitive maps by ensuring that children are not overly motivated or frustrated. Tolman says that:

Only then can these children learn to look before and after, learn to see that there are often round-about and safer paths to their quite proper goals- learn, that is to realize that the well-being of white and negro, of catholic and protestant, of Christian and Jew, of American and Russian (and even males and females), are mutually interdependent (Tolman, 1948, p.264),

evidently showing that the process of learning is incomplete without the discussion of its emotional dimensions .

Learning comes to a social and cultural plane: mediated nature of learning in Bandura's social learning

The social learning theory builds on assumptions that mark a decided shift in the understanding of human nature. Social learning theory bases itself on man's ability to learn from observation, his superior cognitive capacities that help him in symbolic processing and his ability to self-regulate his actions (Bandura, 1971). In the works of Albert Bandura, learning theory started losing its emphasis on mechanistic conditioning and started focusing on cognition and influence of social forces on learning, thereby making clearer the creative and emotional dimensions of learning. Bandura's theory brings learning to a social plane. In his theory learning happens through cognitive operations of individuals on their social experiences. Since learning occurs in a social situation, we can already suspect the involvement of emotions in the process, although we cannot see any direct mention of the involvement of emotions in the process as yet. The focus of their social learning theory of learning was observational learning and imitation. In a remarkable shift from mechanical behaviorist views of learning, Bandura and Walters said that learning could occur through observation. In observational learning, the behavior could be acquired or inhibited even when the behavior is not reproduced or inhibited during the process of acquisition (Grusec, 1992).

Modeling works through its components, and the working of these components show us how to explain the emotional and creative dimensions of learning to a significant extent. The first component, attention, shows that the individual is an active participant in the process of learning. Paying attention to the modeled events is necessary for learning to proceed. Here we see the psychology of learning coming out to officially acknowledge the agency of the individual in the process of learning (Bandura, 1971). The next component of observational learning, retention through symbolic representation, is a radical shift that sets this theory apart. Will it be possible to process a behavior scene and represent it in symbols without creativity? Also, these symbolic representations get converted to actions similar to the observed modeled behavior. Is not there an element of creativity in converting these symbols into active behavior which is similar, but not a replica of the observed behavior, according to the situation? Finally, for the modeled actions to get performed sufficient motivation is necessary. Agency of the individual gets established when the change in behavior is attributed to the individual, along with the external sources, through

self-regulation. Individuals are hardly passive during learning and can self-regulate their behavior because they judge their actions against their internal standards. But, even then, we get the idea that learning is intricately linked to the socialization of the individual when Bandura eventually traces the source of self-regulation to modeling and socialization (Bandura, 1971).

Bandura points out that while reinforcement may be effective in regulating previously learned behaviors, creating entirely new behaviors is a more complex process. Hence by bringing in the influence of socialization and culture, on human learning, Bandura says that human learning happens in society and novel forms of behavior can be taught only through social cues and the numerous elements of culture can be taught to its children only through models (Bandura, 1971).

Bandura observes that human behavioral patterns are abiding part of a culture and get mostly transmitted through observation of social models. Since human learning happens mostly in a social and cultural space, he emphasizes the need for behavioral theories to study social learning and base theories on experimentation that include social variables along with learning variables (Bandura, 1965)

Bandura's classic experiments (Bandura, 1965) on vicarious learning of aggressive behavior show how a socially inclusive as well as less restricted experimental atmosphere brings out more nuances of the process of learning. In this experiment, children had to observe novel verbal and physical aggressive responses of a film-mediated model (Bandura, 1965). The model walks towards an adult size Bobo doll and asks it to move out of the way. When the doll does not comply, the model exhibits novel physical as well as aggressive verbal responses. The children got divided into three treatment groups. In one, the model was severely punished, in another, the model got rewarded generously, and in the third, the model's actions received no consequences. Here we see that unlike the previous experiments that informed learning theories, the individual was not left to learn by himself, but got the benefit of a social encounter. Right after the exposure to the model, the children were taken to an experimental room individually. The room had a Bobo doll, a mallet, and various other play things. The child got told she or he could play with anything. There were several stimulus objects available to the child and had the liberty to engage in imitative responses or other nonimitative activities. Also here we see that individual is not expected to produce an immediate response or act out while observing. After a while, the

experimenters brought some incentives such as juice and stickers and told the children that they would get rewarded for reproducing the verbal and physical response of the model. The results of the experiment show that children who saw the model get punished reproduced significantly more matching responses spontaneously. Children from the model-rewarded and no-consequence categories reproduced significantly more matching responses when compared to the model punished group. Also, when positive incentives got introduced, all three groups performed equally, showing that imitative learning is equal among all groups. Through this, Bandura concludes that reinforcing the model's behaviors influences the performance of that behavior, but not their acquisition. Bandura, therefore, points out that observational learning must require more than mere exposure to models. Since the full repertoire of modeled behavior did not get exhibited by most children, Bandura realizes that response acquisition through imitation will involve factors other than mere contiguity of modeling stimuli (Bandura, 1965).

Therefore Bandura's theory is extended further. A significant advance in the theory is brought about by Bandura by introducing mediation into the process of learning. When learning is vicarious, representation of information, as well as the production of new behavior or solution need mediational responses. Bandura says that mediation occurs through symbolic representation in the form of verbal or imaginal representations. Here one can legitimately ask whether it is possible to represent without imagination and creativity (Bandura, 1965). In social learning theory, psychological functioning gets explained through the idea of reciprocal interaction between environment and behavior. The core of the theory lies in the human ability to learn by observation. Unlike previous behaviorist theories, via this theory, we see that learning does not happen in a piece meal fashion and human beings can learn integrated large units of behavior by example alone. The integration is made possible by the human ability to symbolically represent external events and use them later to solve problems. When Bandura says that individuals can symbolically solve problems, without actually acting those out we have reason to think that imagination is involved in the process. Although not explicitly talked about, agency and creativity become inevitably involved when symbolic representation helps individuals foresee consequences and alter behavior accordingly instead of being passive victims of experiences. One of the ways of symbolic representation is to produce retrievable images of the modeled behavior. Although Bandura attributes this to sensory conditioning, when he says that reference to events elicit their vivid imaginal representation even when physical stimuli are

absent, we can suspect that there is more to imaginal representation than conditioning (Bandura, 1971). In Bandura's words, in the vicarious mode of learning, "imaginal and verbal representations of modeling stimuli constitute the enduring learning products of observational experiences" (Bandura, 1965, p.47). When the product of learning consists of imaginal representation, is it not inevitable for learning too has an imaginative and creative dimension?

The reproduction of learned behavior through social learning also throws light on the creative side of learning. In social learning, the sub-skills that make up complex patterns of behavior get developed via modeling and practice (Bandura, 1971). These componential elements are later integrated by the individual to produce new patterns of behavior. Therefore even when social learning bases itself on observation of models, eventually the behavioral outcome is not an exact copy of the modeled behavior, but something the individual has recreated with her componential skills and imagination. Bandura says that learning by modeling can be a generative and innovative process as well. In complex forms of modeling, the individual does not exactly mimic the model's behavior; instead, common features of various modeled responses are abstracted by the observer. From these common features, the observer has to formulate a rule that would help in generating similar behavioral patterns in different but stylistically similar conditions. Therefore learning becomes a creative process where symbolic cognitive capacities help us create similar yet relatively new responses or behaviors according to the situation at hand (Bandura, 1971).

Even when social learning theory brings the process of learning to social situations, the role of emotion in learning remains largely unexplored. Although Bandura gives significant attention to emotional learning and shows that emotional responses can be vicariously learned, emotions are not seen to have any significant role in the process of learning. But although social learning theory has come a long way from learning through conditioning and reinforcement alone these concepts are still part of the theory. But Bandura brings these concepts to the social realm and says that in everyday situations reinforcement occur in a social context (Bandura, 1971). In human development, social reactions have significant reinforcing effects. Social learning gets support from symbolic social reinforcement. Since the sentiments of others are inevitable to the social learning process, emotions surely get involved in the process of learning? Rewards and punishments elicit emotions in the models which in turn will arouse the observer.

Emotions elicited vicariously can get conditioned to the modeled behavior or environmental stimuli associated with model's emotional situations. Therefore we see that learning has multiple emotional dimensions. When learning is understood to occur in social situations, the narrative on learning cannot proceed without considering emotions of individuals involved. As we can see from Bandura's explanation, emotion plays at least reinforcing and informational purposes in the process of learning (Bandura, 1971).

Eventually, Bandura's social learning theory develops into social cognitive theory and brings out the triadic reciprocal determinism where the individual, the behavior, and the environment interact and influence each other. Therefore we see that when learning theories reach a level where learning gets placed in a plane where individual and society have a bi-directional influence, the creative and emotional dimensions of learning starts coming to the fore (Grusec, 1992).

Learning through perception and experience of properties: Kohler and Gestalt theory on learning

While behaviorism, cognitive behaviorism, and social learning theories were dominating the learning research in psychology, Wolfgang Kohler's work in Gestalt psychology was also simultaneously bringing a new perspective on the psychology of learning (Kohler 1927). Wolfgang Kohler brings a shift away from the idea of learning resulting from stimulus- response pairing and begins to view it as something that gets actively experienced and perceived. Kohler (1941) criticized Thorndike and said that associations could not get formed by mere contiguity which is formed by a sense of belonging. Kohler says that the behaviorist explanation of the concept of association is too simple. He showed that association could not happen without organization or interaction (Kohler, 1941). Association, according to him is a result of interaction and not a simple connection, as the behaviorists put it. The conception of Kohler shows that any association is always the consequence of organization and the conditions that develop organization and association are same (Asch, 1968). In his famous experiments on chimpanzees, Kohler observed that during the tasks there is a sudden occurrence of a definite and clear solution when just one chance movement brought them to their goal (Kohler, 1927). Kohler found that without any trial and error session, his apes could suddenly find a solution to something. A stick got stretched towards the fruit in the chimpanzee's line of vision. The chimpanzee used it to get

the fruit, appropriately, even for the first time and after that retained an interest in sticks and similar objects to get similar tasks done (Ogden, 1932). Kohler observed that this learning was "...an interconnection based on the properties of these things themselves, not a frequent 'following each other' or 'recurring together' " (Kohler, 1927). From his experiment on chimpanzees, Kohler demonstrated that with unorganized materials, 'intentional learning' is required. But, when materials get spontaneously organized, the association will come from the organization itself and they will not have to be established with effort. This process, he called 'incidental learning.' Incidental learning happens when materials get organized in a certain pattern (Kohler, 1958). This awareness of relations or associations was called 'insight' by Kohler. For Kohler, 'insight' refers to "the fact that, when we are aware of a relation, of any relation, this relation is not experienced as a fact by itself, but rather as something that follows from the characteristics of the objects under consideration" (Kohler, 1959, p.6). Our perceptions take the form of configurations. The insight that we get into causal processes is a part of the process of perceptual configuration. The adaptation of gestalt idea of perception in the sciences shows us that how gestalt view of learning throws light on scientific creativity. Waller (1934) explains that from the vantage point of gestalt principles, the core objective of scientific method would be to see the causal configurations from the data arrangement. If the cause is a part of the experience, in the scientific method, we must experience things till they become clear, till we start seeing patterns. Kohler and Gestalt theory has made fundamental contributions to the learning process and involved the contribution of the individual in the form of her perception and her experience. Although this goes further than behaviorism in showing us the creative nature of learning, the inadequacies are fairly clear too. Kohler's idea of insight and perceptual configuration talks about what is there directly in front of you: seeing patterns in what you directly perceive. But human beings can learn beyond what is directly in front of them. They can not only perceive patterns but make new patterns. Also, direct experience is not a necessity for a person to learn or create. Most of what we learn is built on experiences narrated by others or observed in others. Therefore the ability of a person to create new things or ideas from knowledge built on immediate experience, essentially the power of imagination is lacking in insight learning theory.

Learning as a part of overall cognitive development: Piaget's constructivism

A clear shift towards creativity in learning theory begins when Piaget says that knowledge gets constructed. For Piaget, the very purpose of education was to make creators. He says that "One has to make inventors, innovators, not conformists..." (Piaget as quoted in Bringuier, 1989). A new holistic way of viewing learning emerged with Piaget's constructivist theory of development, where learning is not discussed separately from larger cognitive development. Piaget's theory is not limited to learning alone. It is a holistic theory of complete human cognitive development. Learning is not studied as an isolated aspect but as an essential part of human development. Piaget's theory opened up aspects of human learning and development which remained beyond the scope of psychological research. Piaget strongly believed that knowledge gets constructed. Creativity becomes indispensable to the explanation of learning since, according to his constructivist perspective, knowledge does not exist fully formed in the world and therefore should not get thrust upon the children. Piaget says that to understand an object; a subject must act upon it and transform it (Muller, Carpendale, & Smith, 2009). Learning becomes a continuous process of creativity when Piaget says that knowledge is a continuous construction through commutation between the organism and its environment, as well as thought and its object. He says that knowledge is never a copy of the reality, but a continuous reconstruction of reality. Knowledge and intelligence are individual's reconstruction of environmental experience (Bringuier, 1989). Therefore learning must be a process involving creative construction. The role of creative thinking does not get comprehensively dealt with in Piagetian framework, but his ideas of cognitive structures and restructuring give us an idea about the role of creativity in intellectual processes (Ayman-Nolley, 1999). For Piaget, a child's encounter with the environment is cognitive. In a cognitive encounter with the environment, relevant elements from the environment are assimilated by the child into the existing cognitive structures which are currently active in her developmental history. These cognitive structures, in turn, accommodate the assimilated novelty. That is, they modify and transform themselves into new structures to include the new events. Therefore learning must result in novel products and must be a process of continuous transformation. Here learning can be seen as a creative process involving modification of novel reality to form yet another novel transformed scheme. According to Piaget, this is the path of intellectual progress (Flavell, 1963). Piaget saw the mechanisms of intellectual development, accommodation, and assimilation also as the basis

underlying creative process. Assimilation is considered the primary source of creative thought. This process is considered a pleasurable and playful one by Piaget. An important mode of assimilation is symbolic play. As the child's cognitive development progresses, play becomes integrated into general intelligence, and the symbols get replaced by creative imagination and construction. Therefore Piaget's theory goes ahead to show that learning and creativity have same underlying principles and play and imagination are integral components of both. Symbolism which is an integral part of assimilation, according to Piaget, is preparation for imaginative thought. Through Piaget's theory, we see creativity at all levels of learning: Assimilation brings about a novel reality which helps in forming novel schemes which in turn can be applied to form a novel, creative product. The very process of assimilation involves imagination. Imagination acts on the environment during assimilation and results in a novel thought. Through accommodation, the new thought goes through new experimentation to form a creative product (Ayman-Nolley, 1999). Thus, Piaget's theory from the beginning gives room for creation and novelty because cognitive structures are transformed and become new as learning progress. Development aims at reaching an equilibrium of accommodation and assimilation (Flavell, 1963). But, this equilibrium is not an end product in itself, but a dynamic process where new understanding is constructed by connecting or extending previous equilibria and thereby reaching newer equilibria and so on. Therefore Piaget says that creativity and equilibrium are closely interdependent (Ayman-Nolley, 1999).

Also, for Piaget, his conception of reflective abstraction, where higher level schemes get formed through work on internal thoughts from lower level schemes forms the basis of creative thought process. Reflective abstraction is a higher level of assimilation and accommodation, occurring at an inner level, away from physical reality. This process of abstraction must be a creative process since the lower level actions are combined to form new and higher forms (Ayman-Nolley, 1999). We can safely infer that Piaget did not consider the process of construction of knowledge very differently from that of creativity. But it is also evident that Piaget's theory still limits the autonomy of the individual in the process of learning and creation. Learning is still a guided process, and the role of creativity is limited.

Piaget's theory, for the first time, directly introduces the role of emotions in learning. He emphasizes that affect is the causal force that initiates cognitive functioning and decides the

selection of knowledge (Piaget, 1981). Therefore any learning process should have emotional dimensions from the very beginning of the process. Affectivity for Piaget included interests, feelings, and drives. Affect is the energy source for cognitive functioning and organizes the same. Piaget argues that every symbolic or sensory motor act has affective and cognitive angles. Affect and cognition is inseparable. According to Piaget, although affectivity can cause behavior and intervene in it, it cannot generate or modify structures of behavior by itself. Therefore the role of emotions here is limited to energizing and organizing. Also, Piaget finds that the relationship between affect and cognition is not unidirectional. Intellectual development leads to affective development and interaction with cognition helps in the structural organization of emotional states. It is beginning to show that the process of learning has more than one emotional dimension (Piaget, 1981).

In all the above theories one pattern remains same- learning occurs within the individual. The society's role, if any, comes from outside. There is a clear demarcation between the individual and the society. Therefore creativity and emotions are seen essentially as characteristics of the individual. Reading through the theories that engage with the concept of learning in the history of psychology, one pattern is visible: Historically, learning, creativity, and emotions do not get talked about in the same plane. In many early behaviorist theories of learning, there is an outright denial of the concept of mind or human agency, let alone creativity or emotions. But reading into these theories and the experiments that inform them, it can be seen that even theories held potential for seeing the creative and emotional dimensions of learning. Although we find these theories and their experiments strewn with clues and trails pointing towards the involvement of creativity and emotions in learning, due to their epistemological myopia and the resulting narrowness of their experimental set ups, these were not seen or acknowledged. As learning theories started acknowledging mind, human agency, and cognition and brought them into their folds, the creative dimensions of learning start coming to the fore slowly. When the social nature of the learning process was recognized, emotions also starts coming into the picture. With Piaget's theory, it begins to be understood that the creative and emotional dimensions of learning become clearer when learning gets studied as a part of the larger cognitive development. Even then, none of the theories seem to prioritize saying that creativity has an active, dynamic role in the process of learning. Emotions either become the products of learning or a source of energy or motivation for learning. Even though emotion's role

in learning is not extensively dealt with in any of the theories, a critical reading of these theories show that learning must have more than one emotional dimension. Therefore there is a need to search for a theory that is more holistic and attempt to draw out the creative and emotional nature of learning.

Segregation of creativity and emotion from learning: reviewing popular introductory psychology textbooks

This continuing lack of emphasis on creativity and emotions in learning within psychology is visible clearly in the higher education curricula in psychology itself. Most of the internationally popular psychology textbooks, even today, discuss nothing about the role of creativity or emotions in learning and do not discuss learning and cognitive development in the same plane. The 2001 edition of 'Introduction to Psychology' by Morgan, King, Weisz, and Schopler (Morgan, King, Weisz, and Schopler, 2001), which is a popular text book in Indian universities, in its chapter on Learning, talks at length about the behaviorist perspective of learning. It also goes on to talk about cognitive behaviorism, insight learning, and social learning. It does not mention anywhere that learning is related to the larger cognitive development. Any mention of creativity or emotion is absent in the chapter dedicated to learning. Theory of Piaget is mentioned separately in a chapter dedicated to human development. The 2011 edition of Stangor's 'Introduction to Psychology' (Stangor, 2011) also segregates learning from the bigger picture of cognitive development and restricts the discussion to behaviorist theories, insight learning, and observational learning and as a result does not provide any indication that learning could be a creative and emotional process. Piaget's theory is again mentioned only in the chapter on development and not enough to bring out the emotional or creative dimensions that Piaget attributes to learning. Vygotsky's theory finds no mention in the book whatsoever. The chapter on learning begins by explicitly stating that "the study of learning is closely associated with the behaviorist school of psychology..." (Stangor, 2011, p.349), showing that the learning theory, even after decades is still effectively patronized by the behaviorist perspective. James W. Kalat's 'Introduction to Psychology' also falls into the same pattern and develops a behaviorist perspective of learning. The discussion of learning here ends at social learning, and even gestalt theory and insight learning do not come into the picture. As a result, emotions or creativity do not figure anywhere in the discussion of learning. His chapter on

development discusses Piaget at great length and discussion of Vygotsky's theory is limited to a small section that compares it with that of Piaget. But again, the significance given by both these authors to emotions and creativity in their discussion of learning is almost nil (Kalat, 2014). When the curricula for advanced study in psychology are themselves bent on portraying learning as a process that has little to do with emotions or creativity, when popular textbooks that introduce psychology to future researchers are themselves skewed in their theoretical approach to learning, an entire generation of students are going to have a perspective of learning limited to rats in boxes and Bobo dolls. Also, these students would direly underestimate the need for future educators to consider the emotional and creative dimensions of learning in their research and practice.

The need to explore the creative and emotional dimensions of learning: reviewing research from pedagogy

The tension between learning and creativity is a characteristic feature of modern education (Marjanovic-Shane, Connery, & John-Steiner, 2010). Predominant theories that inform teaching and learning do not emphasize creativity to a significant extent (Cross, 2012). Nurturing creativity is not considered as part of the mainstream academic curriculum. This tendency had a lot of contribution from researchers who investigate the area of gifted education and nurturing creativity is considered reserved for a select few who are categorized 'gifted' or 'talented.' Creativity and learning get conceptualized as separate curricular goals. The result is that only a fraction of the population gets the opportunity to develop their creativity in schools (Beghetto, 2010). Cropley (2001) says that 'fostering' creativity should be the aim of all teaching and learning processes. We see that creativity remains a part of the discourse on teaching and learning and not the base of it. Creative arts programs are prone to be removed from the pedagogy because of economic constraints or because of the worry that they might affect the learning of other academic subjects. The Australian Curriculum, ACARA 2010 limits the arts to a particular area of the curriculum. The curricula consider creativity as a supplement to core pedagogy and assume that it is something that gets taught (Cross, 2012). Lobman (2010) points out that on an overall note, pedagogy programs that engage with creativity as an add-on activity has impoverished the learning experience of the majority of school children in America. Widespread segregation of 'learning' from 'creativity' is visible in contemporary discourses on

education and learning (Cross, 2012). The understanding of the role of emotion in pedagogy is also not so hopeful. Emotion is not seen as the very nature of learning process but as something from outside that ‘influences’ it. In some studies, emotion gets seen as playing a ‘role’ in the ‘acquisition’ of knowledge and skills (Op 't Eynde & Turner, 2006). Some others go further and say that researching classrooms must include the examination of the emotions of teachers and students (Meyer & Turner, 2006). A particular research from a socio-constructivist approach in a mathematics classroom shows that each student has a different emotional experience while solving problems according to their appraisals and interpretations of the processes leading to problem-solving (Op 'T Eynde, de Corte, & Verschaffel, 2006). All these research studies point to the implication of emotions in learning, but do not reach to the point where learning becomes emotional by its very nature and where emotions are not limited to the individuals but work on a dialogic plane.

The significance of a Cultural Historical Psychology’s point view:

The inadequacies of popular theories give us a rationale that demands a holistic approach. The search for a holistic theory that would bring out the creative and emotional dimensions of learning takes us back to a theory that took shape in the 1920s and 1930s: Lev Vygotsky's Cultural Historical Psychology. His works were mostly censored by the then Soviet regime but started gaining interest in the 1950s. The emerging attempt to bring up a socially grounded and politically revolutionary basis for social psychology and the translation into English of his work *Thought and language* in 1962 found Vygotskian theory new audience in mainstream psychology (Sirotkina & Smith, 2012). The focus of cultural historical psychology on mediated action in context and how mental functions get socio-historically generated (Vygotsky, 1978), helps us place learning in a mediated historical context, thereby including the cultural, historical and social aspects. Learning, within the tradition of cultural historical psychology, is primarily placed in the interpersonal plane. The transactions between individual and society give rise to a symbolic world that emerges out of meaning making and co-construction of knowledge (Valsiner & Rosa, 2007). Here, symbols and meaning arise in a dialectical plane, and within such a plane, learning will not get understood as an isolated process, but as a part of a larger social, developmental process. Lev Vygotsky pointed out the mediated nature of human cognition way back in the 1920s. Within cultural psychology, Vygotsky laid the foundation for the exploration

of learning. The basic tenet of Vygotsky's psychology that all psychological functions first appear on the social plane, between people, and is then internalized and become an intrapsychological process (Vygotsky, 1987), makes it effective in dealing with the deficiencies of mainstream Learning theory. The focus of learning would shift from acquiring knowledge to a process that leads development which emerges on a dialectic plane, because, according to Vygotsky, discussions on learning and development cannot go separately. They are part of a dialectical, emergent process, where development gets led and supported by learning (Lobman, 2010).

Summary:

The exploration of cognitive behaviorist, gestalt, and developmental theories shows the slow broadening of the concept of learning in psychology. As theories start incorporating more dimensions - purpose, cognition, insight, perception, experience, society, culture, mediation, construction of knowledge and development- the concept of learning starts coming closer to its creative and emotional dimensions. But none of these theories reviewed openly acknowledge or point out in detail the emotional and creative nature of learning. Review of textbooks reflect this trend in mainstream psychology and does not discuss creativity or emotion along with learning. Review of research from pedagogy shows various instances where creativity and emotion are essential to learning. The search for a holistic theory that would help us draw out the creative and emotional dimensions of learning leads us back in time to Lev Vygotsky. Reviewing Vygotsky's theoretical concepts in detail will enable us to see how learning is both a creative as well as an emotional process.

CHAPTER 3

Exploring the creative dimensions of learning through Vygotsky's theory

What sets the theory apart? Why is it a good place to search for creative and emotional dimensions of learning?

Vygotsky's view of the relation between learning and development (Vygotsky, 1978) sets his theory apart from his predecessors and contemporaries and gives learning an active role in human psychological development. Unlike previous theorists who considered learning to be a process wholly dependent on development, or consider learning as development itself, Vygotsky attributes more power to learning. He emphasizes that learning and development are interrelated in a child's life from the very beginning. But he points out, that the relationship between development and learning is quite complex. He brings in a paradigmatic shift in the view of learning and says that learning precedes and leads development, thereby giving ample space for learning to be seen as an active creative process. Learning is inseparable from overall human development. Any new learning results from and depends on child's development. Learning and development are seen in totality in which learning leads development (Vygotsky, 1978).

Vygotsky's theory places human behavior in a larger framework where behavior is social, historical and imaginative. Vygotsky says that any new behavior develops in an imaginative as well as material realm and called this double experience (Vygotsky, 1925). Therefore the core of Vygotsky theory views behavioral development as creative. According to Vygotsky, our very consciousness is socio-historically formed. When human behavioral development is social, emotions have a cardinal role to play in the process of learning. Therefore we can enter Vygotsky's theory with a hope that learning, emotion and creativity are not studied as independent cognitive processes but as part of larger complex processes that determine the nature of learning and development (Vygotsky, 1925). In Vygotsky's theory, learning is a continuous process that precedes and brings about behavioral development, which in itself emerges from the merger of both natural development, concerned with organic growth and maturation and cultural development of psychological functions. The psychological development of the child occurs through the child's socio-cultural experience. While the development here is

conditioned through external socio-cultural influences, the individual is not simply assimilating experiences, but there is an active inner psychological change (Vygotsky, 1929).

Learning as meaning making through mediation

Learning is looked at in Vygotsky's work as a process of 'meaning making' or semiosis. Explicating Vygotsky's idea of meaning making will help in exploring the creative and emotional dimensions of learning. Meaning making must have emotional connotations since, according to Vygotsky, it occurs in a dialectic plane. This process of learning through meaning making occurs in the dialectic plane of 'Zone of Proximal Development'. Meaning making in ZPD is "the construction of knowledge into understanding with others" (Vygotsky, as seen in John- Steiner, Connery, & Marjanovic-Shane, 2010). Meaning making is not about concepts within a single individual's head, but about understanding others and ourselves with respect to others (John- Steiner, Connery, & Marjanovic-Shane, 2010). Meaning making could, therefore, be closely related to self-construal processes and emotions attached to that process. Meaning making in the ZPD occurs through the individual's lens of '*perezhivanie*' or lived emotional experience. The need for meaning making arises from social need, the need to organize life as social individuals. Therefore emotions have to be implicated in learning. We see that there is a very significant and complex relationship between creativity and learning because meaning making is historical and a learner today discovers and recreates tools inherited from previous generations, and thereby creates meaning and become the medium for the creation of new meanings (Vygotsky, 1986).

Starting with an initial study by Vygotsky:

Vygotsky's narration of some of the initial studies conducted by him and his team bring out how this theory could be a good place to explore the creative dimensions of learning and cognitive development:

In their studies, the problem to be solved by the child was chosen such that it was usually above the child's natural capacities and it was made sure that the problem is encountered during the natural activity process of the child (Vygotsky, 1929). The problem has to do with remembering words, figures or other data. The child has in front of him objects irrelevant to the task such as pins, paper, small shot, string etc. It was observed that if the child finds a solution,

he does it with some recourse and the recourse appear to be cultural symbols such as piercing or tearing paper, tying knots on the string etc. Here the child learns to solve an internal problem by acting on the external objects by making them functionally significant symbols. Here we begin to see the creative element of learning because the child combines the elements of his culture and available materials to create novel solutions (Vygotsky, 1929).

Through these studies, Vygotsky brings out the genesis of human behavior. He says that as far as he can trust the artificial surroundings of his experiments, cultural development of the child passes through four stages. In the first phase when the child meets with the task of remembering words, he according to his interest levels, uses whatever primitive means he had to complete the task. This is characteristic of the 'primitive psychology' phase of cultural historical development of mental operations. The progress to the second stage occurs when the child meets with some difficulty during the primitive psychology stage and his natural means are not enough anymore. In this experiment, Vygotsky observes that after extended trial and search, the child discovers a way to remember by himself or with the help of some assistance from the experimenter. Some pictures that were naturally connected to the given set of words were placed in front of the child. Pictures reminded the child of the word series and he easily reproduced them. This is the 'naïve psychology stage' where the child is able to grasp the method of using the pictures to memorize but has not yet understood how the particular picture helps in memorization. The child has not grasped the logic behind his or her behaviors. So the next time he is given another series of words. He takes the pictures given earlier and places it in front of him. One begins to see that active exploration and agency are becoming part of learning process. But the next series of words are not directly related to these pictures and since the child does not know how pictures help in memorization, he reproduces a word that is related to the picture and not the one given to him. This behavior of the child in the naïve psychology field shows that during the learning process the child is actively engaging with the available materials and learns the technique for memorizing and not just the words. He learns to make a 'sign' out of the picture and creatively uses the sign for finding the solution. The child makes use of his or her experience with the physical properties of objects in his surrounding and that of his or her own body and applies this in making signs and uses them as tools. Learning becomes a creative and transformational activity when the child passes on to the 'external cultural method', and an external activity replaces the process of memorizing. External processes and signs aid in solving

internal problems. The child starts to choose one picture that is best associated with the provided word. When Vygotsky says "At first he tries to see the natural association which exists between the picture and word, but soon afterwards passes on to the creation and formation of new associations" (Vygotsky, 1929), it becomes clear that learning is a dynamic process of creativity and transformation where the end products are never an exact copy of what is to be learnt but something novel. Also, it seems, during learning process, the individual is continuously discovering as well as creating new connections or methods of learning which themselves can be considered as the products of the creative side of learning. From the third stage emerges the fourth where the external means and symbols grow internal and become internal activity. The child had the task of remembering words with the help of pictures arranged in a certain order. After a few trials child is able to do the task without resorting to the pictures for help. The child has already internalized the pictures and their order and associates the words with his internal scheme of the pictures and their order. There is an ingrowth, and external stimuli replaced by internal ones. The sign that enabled the learning process itself becomes unnecessary after a point. The next transition in the fourth phase clearly points to the involvement of creativity in learning. The child constructs internal processes of the same type as the external method mastered by him and makes symbols of his remembrances. With these inner schemes, symbols, and knowledge, the child correctly solves analogous problems even in radically different external conditions, thus making the process inherently creative (Vygotsky, 1929). This experiment leads us to the core of Vygotsky's theory: mediated nature of cognition. In Vygotskian theory, exploration of creative and emotional dimensions of learning must begin with the ideas of mediation and meaning making.

Mediated nature of cognition and learning as meaning making:

According to Vygotsky, our contact with the world outside is indirect. We contact the world through 'tools' or 'signs', that is our cognition is mediated (Wertsch, 2007). Vygotsky's idea of socially elaborated learning is rooted in the idea of mediation and mediated cognition. Learning becomes a socially elaborated process through mediation. The means of adaptation already provided in the society is internalized by a child through signs. Expansion of the child's boundaries of understanding happens when they internalize socially elaborated symbols (Vygotsky, 1978).

Vygotsky gave special significance to language as a tool (Vygotsky, 1978). Signs and words arise to function as means of social contact, for communicating with members of the community. Social contact, according to Vygotsky, is the foremost function of tools and signs. Signs change the child's problem-solving skills radically. Before appropriation of signs, the child would solve problems impulsively and with overt motor actions and movement. When children start using signs they do not know how to openly act out to solve a problem: instead, they solve it internally through the connection between the sign and the original stimulus. Sign becomes the link between stimulus and response and changes the relation between stimulus and response radically. Vygotsky stresses that the individual is actively involved in the process of mediation. Mediated activity in terms of signs and tools transform children's psychological operations and develops them. They also broaden the range of potential activities that they can perform (Vygotsky, 1978). Since these tools are given to us by our respective cultures with their historical and institutional forces, human cognition is socio-historically situated (Wertsch, 2007). The means of mediation or tools could be language, sign language, mathematical symbol systems, imagery, musical notes etc. (John Steiner, Connery & Marjanovic-Shane, 2010).

Leont'ev's extension and explanation of Vygotskian theory (Leont'ev, 1981), shows how learning is mediated, as well as how mediated learning is creative as well as emotional. Leont'ev gives Vygotsky's ideas a more precise form and shows that human learning is centered on appropriation. Appropriation "is a process that has as its end result the individual's reproduction of historically formed human properties, capacities and modes of behavior" (Leont'ev, 1981). A child develops through the appropriation of human cultural historical achievement. In appropriation, individuals actively recreate the cultural products historically created by their society. A human child does not passively adapt to its culture: the child appropriates the culture and makes it her own. But the culture encountered by the child is received only as raw materials. The child has to actively recreate it for herself. Such a reconstruction does not create exact copies of cultural components: modification is inevitable in the process. The appropriation of culture is a process of creative reconstruction and the product of learning here will be a little different from what has been taught earlier, that is, the process of learning involves creativity and its products are always new (Leont'ev, 1981).

Importantly, this learning is socially mediated, more precisely, mediated via social relationships. Leont'ev (1981) says that learning is mediated by the social relations that the child forms during speech contact and joint activities with people in her society. Appropriation begins as overt, concrete social activity before it is internalized as a cognitive activity. When a process is mediated by social relations, emotions figure significantly in it (Leont'ev, 1981). The semiotic means, being the fundamental blocks on which our understanding is built, have the ability to shape the idea of who we are, our identities and how we experience life (Connery, 2010). When learning leads development through semiosis, something deeply related to our identity and our idea of who we are, the process becomes intensely emotional. Also, the meanings of the signs are acquired socially through constant dialogue with other members of the community. When any meaning making process has at its roots creation of understanding among each other, it is inevitable that the emotions constantly mediate this dialectical plane of learning. When learning leads development via continuous meaning making through cultural tools, emotions becomes foundational interpsychological resources that foreground learning.

An inquiry into the zone in which the mediated meaning making occurs will shed further light on creative and emotional dimensions of learning.

Zone of Proximal Development:

We saw that learning leads development by making meaning through mediation and that this process occurs within social relations. In Vygotsky's early experiment that was analyzed, it was also seen that child, during learning, takes the help of more experienced individuals to develop skills which she has not already developed. These facts lead us to a very significant concept of Vygotsky's theory: the zone of proximal development.

Vygotsky explains the relationship between learning and development through his concept of the 'zone of proximal development' (Vygotsky, 1978). A careful reading of this concept helps us see that in the cultural-historical framework, learning has multiple creative and emotional dimensions.

Learning has the potential to take development further from what has been achieved already. This happens because learning creates zones of proximal development as it progresses to higher levels. Zone of proximal development, according to Vygotsky is "the distance between

actual development as determined by independent problem solving and the level of potential development as determined by problem-solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p.86). Zone of proximal development encompasses those functions that are currently not matured but has the potential to mature with guidance from or collaboration with adults and peers. The concept of the zone of proximal development shows that learning has creative dimensions when it brings out the role of imitation in learning. Unlike previous theories where only what the child has learned independently is considered a developmental achievement, in a zone of proximal development, where the child learns with the help of guidance from others, imitative activity becomes an essential part of learning. In the zone of proximal development, imitation is used in teaching, learning, and intellectual development. Creative thinking is involved not only when children imitate actions of others to learn, but also when they use this learning to solve problems that are more advanced. Learning, according to Vygotsky, precedes development and creates zones of proximal development where development occur (Vygotsky, 1978). Therefore learning must be a process that is constantly creating new spaces for development to occur.

Regarding the zone of proximal development, Vygotsky says "Human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them" (Vygotsky, 1978, p.88). Here the role of emotions also comes to the fore. It is inevitable for emotions to be involved when learning is an interactive process in a social situation, where individuals have to interact, imitate and negotiate with each other. We see that learning can progress only through constant human interaction when Vygotsky explains the zone of proximal development by saying that "...learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers" (Vygotsky, 1978 P no: 90). And it is surely impossible for human beings to interact without being influenced constantly by their emotions. Holzman (2010) explains that zone of proximal development is a relational plane that involves fundamental processes where the personal and social aspects of development unite to realize new functions that are not yet mature. Also, the concept of the zone of proximal development involves learner's acts, thoughts, and feelings (John- Steiner, Connery& Marjanovic-Shane, 2010). If learning progresses in a relational process involving the learner's feelings, it follows that learning has obvious emotional dimensions. Also, Vygotsky points out that learning in the

zone of proximal development does not refer to the creation of exact replicas of cultural ideas. Even when learning progresses through social mediation, each person learns and makes sense of cultural ideas through the prism of their lived emotional experience, *perezhivanie* (Vygotsky, 1994).

The role of imitation in the zone of proximal development especially brings out the creative dimension of learning. Vygotsky says that children do not imitate randomly. They imitate what is beyond their current developmental level, but present in their social relationships (Vygotsky, 1978). Here imitation creates ZPD for the child by making him a 'head taller' and as Holzman (2010) says, this characteristic (that it creates ZPD) makes the process of imitation fundamentally creative. When learning leads development through imitation and creation of ZPDs, the process of learning itself becomes inherently creative.

When Holzman (2010) explains that Vygotsky's conceptualization of ZPD is a method of "becoming" where "people shape and reshape their relationship to themselves, each other, and to the material and psychological tools and objects of the world"(Holzman, 2010, p.31), it becomes that learning in a ZPD is actively creative where the learning environment itself gets constantly created. Holzman emphasizes that in this case, creativity should come out of its traditional conceptualization where it is an attribute of a single individual that results in extraordinary products. In a zone of proximal development, creativity is a collective activity where the products are ordinary and not necessarily extraordinary. Holzman further explains that in a zone of proximal development creativity can never belong to a single individual because, in a collaborative learning community, the person who initiates the creative thought need not be the one who finishes it. When children begin to learn the language, others are constantly completing their thoughts and speech. In fact, children learn optimally when their community acknowledges them as fellow creators. Therefore we can see that through the eyes of cultural-historical psychology, learning is creative and moreover, creativity itself is redefined (Holzman, 2010).

Vygotsky points out the acquisition of language as a paradigm that exemplifies learning and development through the zone of proximal development (Vygotsky,1978). The need for communication in her society leads the child to learn the language. This learning that arises in the social zone gets internalized and developed into a mental function. In this process of learning based on communication, emotions plays a crucial role and since learning from others progresses

mainly through imitation, which is a creative process, creativity is also found to be a necessary dimension of learning.

Learning leads development through the creation of ZPDs (Vygotsky, 1978). Vygotsky says that all functions in children's cultural development appear on two levels: between people on the social level and inside the child on the psychological level. Since learning precedes and aids development, it must be a process of creating a social space for concepts to develop between people. Vygotsky emphasizes that "The actual relations between human individuals underlie all the higher functions" (Vygotsky, 1978 P. no 57). When development of higher psychological processes bases itself on human relations, learning, which leads development, must be centered on human relations. Human relations can never be devoid of emotions, and therefore emotions must be a part of learning.

When the idea of creativity itself changes!

Vygotsky's conceptualization of creativity and imagination sheds further light on the creative and emotional nature of learning. These concepts can be used to argue that learning is creative and emotional.

Vygotsky acknowledges the notion of novelty in creativity and says that "Any human act, that gives rise to something new is referred to as a creative act regardless of whether what is created is a physical object or some mental or emotional construct that lives within the person who created it and is known only to him" (Vygotsky, 2004, p.7). According to him, creative behavior is a combinatorial behavior that involves any human activity that creates new products, and not merely reproduces previous experiences. Vygotsky calls this creative, combinatorial behavior of human beings 'imagination or fantasy'. He makes it a point to emphasize that the layman's idea of fantasy or imagination should not be confused with scientific psychology's idea of the same. Unlike the everyday meaning of fantasy and imagination, where it comes across as something that has no correspondence with reality, in Vygotsky's conceptualization, imagination is the basis of our cultural life and all acts of creativity. In such a conceptualization, creativity does not get restricted to the realm of a few individuals who are geniuses who bring about extraordinary breakthroughs. Creativity is seen to be the rule of human cultural life and not an exception when Vygotsky says that "...creativity is present in actuality not only when great

historical works are born but also whenever a person imagines, combines, alters and creates something new, no matter how small a drop in the bucket this new thing appears compared to the works of geniuses" (Vygotsky, 2004, p.10).

Vygotsky also emphasizes the collective nature of creativity. Many of the everyday individual creativity that gets deemed insignificant come together, to form collective human creativity in the long run. Much of the creative works of human civilization thus gets attributed to this collective form of creativity in which mundane everyday creativity of anonymous individuals has a significant role. Any process where we innovate beyond routine, involve creativity and creativity is essential for our very existence (Vygotsky, 2004).

The review has shown that the process of learning leading development in a ZPD is a continuous creative process and that the very idea of creativity changes through cultural, historical psychology's approach to learning. Critically reviewing Vygotsky's idea of creativity as imagination or fantasy further adds to this understanding. Vygotsky says that a picture of the French Revolution or the African desert that we construct for ourselves based on studies or stories of historians or travelers is the result of imagination. While imagining, previous experiences are not reproduced but get combined in new ways to form novel products (Vygotsky, 2004).

Vygotsky makes it clear that imagination or fantasy is never out of touch with reality. In fact, imagination serves our psychological purposes precisely because the end product of creativity always corresponds with a real phenomenon. This correspondence between reality and imagination is possible only through social experience, with the help of someone else's experience.

It is only because in these cases my imagination operates not freely, but directed by someone else's experience, as if according to someone else's instructions, that we can obtain the result we get in this case, that is, the fact that a product of imagination corresponds to reality (Vygotsky, 2004 P. 17)

Therefore imagination helps a person conceptualize what she has never experienced in person through narration and description by another person. Imagination, therefore, is evidently an essential condition for human cognitive activity. Vygotsky specifically points out that imagination serves experience whenever a child studies any discipline.

When we see how imagination expands human experience through social experiences, from the experience of more knowledgeable persons in the community, we see that this is how learning progresses through a ZPD, exactly. Hence we see why Vygotsky mentions that imagination is an integral part of learning. Vygotsky's broad, revolutionary explanation of learning through the concept of ZPD and an equally revolutionary explanation of creativity as an everyday, community-based process, through the concept of imagination complement each other and help us establish without doubt that learning is a creative process by expanding both the concepts- learning as well as creativity.

Analyzing Vygotsky's explanation of the dual relationship between emotion and imagination eventually shows us that there is a dual relationship between learning and emotion since learning in ZPD has already come out as a creative, imaginative process. Vygotsky explains that images of imagination work as the internal language for the expression of our feelings (Vygotsky, 2004). Vygotsky points out two affective elements of imagination. In imagination, elements of reality are selected and combined according to our mood. Also, the constructs of our imagination, in turn, will affect our emotions. The emotions evoked by imagination are very real. These emotions get seriously and deeply experienced by us. In a zone of proximal development, learning is a continuous creative process. Therefore the dual relationship of imagination and emotions would certainly apply in the realm of learning, and we can argue that the constructive process of learning gets guided by our emotional states, and the new meanings that are constantly getting created will be influencing our emotions. Vygotsky emphasizes that any thought is incomplete without affect and that human creativity has its base on both thoughts as well as feeling. When thought and creativity are inseparable from emotions, it follows that learning will also have an emotional basis. Therefore it is necessary that we start recognizing learning not just as an intellectual process, but also as an emotional process.

Vygotsky quotes products of literary creativity to say that we cannot explain a product of creativity solely through its intellectual logic- a piece of literature may not make full sense from intellectual logic's vantage point (Vygotsky, 2004). Since in Vygotsky's theory creativity is involved even in everyday combinatorial activities that produce something new, and learning itself involves creativity, it is safe to infer that learning will have its emotional logic and cannot get reduced to a mere intellectual process.

Vygotsky's explanation of one characteristic feature of imagination- exaggeration helps see the significance of both emotions and imagination in children's learning. Through exploration of works of Gros, Buhler, and Ribot, Vygotsky argues that the exaggerative quality of imagination is necessary for children to understand and learn mathematics and science. Exaggeration which is a significant part of imagination has its base on our internal feelings about external impressions. Exaggeration corresponds to our needs and wants. Vygotsky observes that this process of exaggeration helps children learn the concept of quantity when they haven't yet begun to deal with quantities directly. By exaggerating to satisfy their needs, for example: "I have 30 coins, I mean 50, I mean hundred, I mean thousand!"(Vygotsky, 2004 P.27), children slowly learn concepts of quantity. Building knowledge in mathematics or science has imagination at its core. Explorations of astronomy in the infinity of time and space require bold numerical exaggerations. Some of the hypotheses in the frontiers of contemporary quantum physics involve almost fantastic exaggerations and imagination. When exaggeration and imagination are unavoidable in the process of expanding knowledge in mathematics and science, it follows that learning these disciplines would also be based on exaggeration and imagination.

Since the basis of exaggeration and imagination already got traced to internal feelings, any learning of these disciplines or other similar disciplines would certainly have an emotional basis. Vygotsky points out very clearly that imagination always gets triggered by needs or drives(Vygotsky, 2004). Vygotsky also points out that creativity of children turn more complex during adolescence and says that the heightened emotionality levels and emotional volatility during this period, contribute significantly to the increasing complexity of creativity. Again, this leads us to say that emotions will also contribute significantly to learning in ZPD, which, as has been seen earlier, is a creative process. Also, we see that the creative process of learning will in turn influence emotions when Vygotsky says that creative endeavors of adolescents "...deepens, expands, and purifies the child's emotional life..."(Vygotsky, 2004).

Playful learning: Learning becomes a creative and emotional process

Before the structured and instructionally oriented learning begins in school, learning and development result from mediated meaning making which occurs through a significant activity of childhood i.e. play (Vygotsky, 1978). Analysis of the role of play in learning and development in Vygotskian theory shows us very clearly that learning has significant creative and emotional

dimensions. The play is essentially a creative process where an imaginary situation gets created by the child. The play is seen to emerge from emotions when Vygotsky points out that, children create an imaginary world of play to realize desires that are unrealized in the society. Children need immediate gratification of their needs, and as they grow up and meet with desires that are beyond immediate satisfaction, they resort to the imaginary world of play (Vygotsky, 1978). If the purpose of play is to gratify tendencies that are impossible to be gratified immediately, it follows that the play and the imagined situation have an emotional tone.

Vygotsky's ideas on "play is the imaginary illusory realization of unrealizable desires" and that "play is essentially wish fulfillment- not, however, isolated wishes, but generalized affects," (Vygotsky, 1976, p.540), shows that both creativity and emotions have significant roles to play in children's play. He explicitly says that play is affective by nature and when play gets developed from desires that cannot realize; the involvement of imagination is involuntary in the process. Since play is the major source of learning and development in the early years, learning must begin in an individual's life from an affective state, as a creative, imaginative process.

While essaying a role in the play, the child attempts to be like the real life version of that role (Vygotsky, 1978). Through play, the child notices previously unnoticed rules of the role and thereby comes to learn the real-life meaning of the role and its relationships. In this process learning rules of behavior is a playful, creative and emotional process. The child acts out the behavior and through the process of acting learns and internalizes the behavior: Children's games begin with covert rules and overt imaginary situations and with the evolution in play the rules are internalized and are reproduced overtly while the imaginary situation itself becomes covert. Learning and development require a child to separate meanings and thoughts from objects. Play is where children begin to learn this. As Vygotsky says when a piece of wood becomes a doll or a stick is imagined to be a horse, ideas of objects and not objects themselves have started determining the rules of action. Successful learning must, therefore, provide playful, creative situations. Abstract thinking develops by learning to separate the meaning from the object, and this occurs through the active imagination of the child's world (Vygotsky, 1978). Meaning making and language learning both emerge through play. While learning to dissociate meaning from immediate situations, the child begins to learn the language too since meaning gets freed from the object through the word. Although full-fledged symbolic activity does not emerge

through play, semiotic mediation and abstract thinking emerge through play. Play facilitates learning since, it creates zones of proximal development for the child, where acts above his age, thereby leading development (Vygotsky, 1976).

Play is one of the earliest activities of children where they start learning through appropriation (Leont'ev, 1981). Children learn through play since it involves an overt, concrete reconstruction in a joint activity. And this is enabled through semiotic mediation. Through cultural-historical theory, it becomes clear that play mediates learning by helping them move up the zone of proximal development. When a creative activity such as play is an essential part of learning, creativity's role in learning is indisputable.

When learning progresses in play through joint activities, the emotions inherent in human relations will also certainly play a role in the process. Marjanovic Shane (2010) has extended Vygotsky's idea of play and has attributed more dimensions to it. Play according to her is a unique interpersonal act where participants collaborate in directing the play as well as their values, judgments, and actual relationships. In her exploration of play in a learning situation (a program where smart devices and robots are built using Lego blocks and programmed using computer, in the East Coast Latin American Community Center), involving children of various age groups, Marjanovic Shane (2010) observes that a play situation is a community of players who are mutually voluntary. Observing a child who refused to join a play initiated by a teacher, she says that individuals have to feel that they are invited to the game and join voluntarily. It showed that it was impossible for a person to be a part of a play community if he or she is not invited, or does not feel invited. Therefore it can be inferred that children's emotions will influence their learning, which is essentially playful and play-mediated. Collaboration in play was found to involve mutual trust and risk taking and the relation formed in the process "is not a mere relation, it is a relationship" (Marjanovic Shane, 2010, p.56). Through her study, Shane explains that meaning making in play can be seen to involve an emotional catharsis: a transformation of relationships and emotions in the community of players. The play that was going on in the activity room involved various emotions- feelings of disappointment or fulfillment, feelings of obligation, feeling of making friends, etc. which arose among the dialogic relations among roles in the play community. It showed that while collaborating to form an imaginary world, the relationships and emotions get transformed and the new emotions brought

about new understanding and meaning. Therefore it is evident that creation of meaning and development of new understanding in playful learning gets mediated by emotions throughout (Marjanovic Shane, 2010).

Learning through play is influenced by emotions in many ways. During play, the child has the freedom to do what she feels like doing and shows very little resistance (Vygotsky, 1978). Since play aims at pleasure, learning, in which play plays an important role, must be influenced by emotions. Play also involves giving up immediate impulses and wants through rules of the game to attain maximum pleasure at the end of the game. There is a constant conflict between her immediate wants and the rules of play. Such a situation cannot be free of emotions of individuals involved. By learning to control immediate impulses, the child develops self-control and will power. These processes would certainly involve management of emotions. Self-control and will power, although constraining, leads to maximum pleasure at the end. Vygotsky emphasizes that the essential aspect of play is how rules turn into desires. When Vygotsky quotes Spinoza to say that play is "an idea which has become a desire, a concept which has turned into a passion" (Spinoza as quoted in Vygotsky, 1978), we see that emotions have many roles to play in the beginning, both as part of the process, and as a product of learning.

In play, child exhibits behavior she hasn't learnt or understood yet. Therefore a zone of proximal development is created during play where child behaves beyond her age and displays behavior that is more advanced than what she displays during her everyday behavior. In Vygotsky's words, "child acts as though he were a head taller than himself" (Vygotsky, 1978 p.102). Learning process during pre-school years would progress mainly through play since the zone of proximal development created during play would lead the child forward and aid in development. In both school learning and play, zones of proximal development get created where social knowledge and skills are elaborated and internalized by children. Since creating zones of proximal development involves creativity as well as emotions, as previously discussed, playful learning must also involve creativity and emotions.

According to Vygotsky, play helps in separating thought from its objects. The meaning starts dominating the object or immediate situation. A micro genetic analysis conducted by St. John (2010) in a music class-room shows very clearly that given the freedom to explore, children's learning is playful and they learn to separate meaning from objects through playful

exploration. During the free exploration of musical instruments, children started using a stir xylophone as a bowl and started pretending that they were making soup in it. Here a stir xylophone became a mediating artifact with which children learned the socially constructed norm of soup making. Here the child has successfully separated the meaning of soup making and soup bowl from their original situations and objects and transferred it to the xylophone. Here they have started working with the idea of soup making and not the actual process. These playful explorations eventually lead to a cognitive understanding of musical concepts. The exploration of xylophone through the soup making drama helped the children explore and experiment with tempo and timbre. They started understanding that different speeds of stirring and different stirring materials lead to different sounds. The learning leads to expanded activities: they started connecting made up songs to their cooking game. In the collaborative community that got formed, children started learning rhythmic exchanges and understanding how an ensemble work. St. John's (2010) analysis of this learning scenario shows that learning through concept formation is a creative activity and that learning progresses uninhibitedly at its natural pace when the creative processes in learning are acknowledged as well as encouraged.

Perezhivanie: learning through one's emotional prism

The role of emotions in learning comes out clearly when we analyze a lesser explored concept of Vygotsky- *Perezhivanie*. Vygotsky uses the Russian term *perezhivanie* to refer to an individual's emotional experience (Vygotsky, 1994). Vygotsky says that factors that influence the course of child's cognitive development by themselves cannot decide how they will influence development: these factors influence each child through her *perezhivanie* or lived emotional experience. Since any factor that influence development will do so only after getting refracted through the child's *perezhivanie*, learning, which essentially leads development, must also be influencing child's development through her emotional experience. Learning, therefore, will influence each child through her lived emotional experience or *perezhivanie*. Vygotsky defines *perezhivanie* as "how a child becomes aware of, interprets and emotionally relates to a certain event" (Vygotsky, 1994) and emphasized that studies of education must take into consideration the refraction happening through *perezhivanie*, because the same event will evoke different emotional experience, *perezhivanie* in different individuals. Also, it leads us to say that we cannot judge a learner from one particular learning situation, since different learning situations

will be refracted differently through the individual's *perezhivanie*, and as it follows, different children would respond differently to the same learning situation. Vygotsky also points out that while a child's *perezhivanie* would determine the environment's influence on development, *perezhivanie*, in turn, depends on the child's age and developmental level (Vygotsky, 1994). Therefore we also realize that a child would learn differently at different ages and different developmental levels, and an important reason why this change in learning process happens is the change in her emotional experience, *perezhivanie*, through which child makes sense of learning. Also, it becomes necessary to realize that such an understanding of the role of emotions in learning is possible because the cultural-historical framework emphasizes the dynamic nature of the relation between the individual and her socio-cultural environment, that is, this understanding is possible only with the realization of the co-constructive nature of the individual-society relationship.

This highly abstract and less explored concept of Vygotsky explains better through a study conducted within a cultural-historical psychology framework. Although this study (Smgorinsky, 2010) was designed primarily to study inscription of self in the curriculum, we can use their data to see how learning gets refracted through *perezhivanie*. This particular case study described in Smagorisnsky (2010) follows two students Rita and Dirk in a British literature class. Both the students had troubles with attention and Rita had attention deficit disorder diagnosis. The teacher gave an assignment where these two students had to interpret John Keats's poem, "When I have fears I may cease to be." The team had to graphically represent their interpretation on paper, present the interpretation in class, and lead a discussion on the meaning of this poem.

When I have fears that I may cease to be
Before my pen has gleaned my teeming brain,
 Before high-pilèd books, in charactery,
 Hold like rich garners the full ripened grain;
When I behold, upon the night's starred face,
 Huge cloudy symbols of a high romance,
 And think that I may never live to trace
Their shadows with the magic hand of chance;
And when I feel, fair creature of an hour,
 That I shall never look upon thee more,
 Never have relish in the faery power
 Of unreflecting love—then on the shore
Of the wide world I stand alone, and think
Till love and fame to nothingness do sink.

It shows very clearly that both Rita and Dirk's interpretation had got heavily influenced by their personal experiences with death, which is the theme of Keats's poem. Dirk had recently withdrawn from the church after the death of his pastor. Rita's best friend's sister, who she had been close to, had committed suicide recently. Mary, the sister of Rita's best friend, was twenty-four years old and had committed suicide due to clinical depression the day before the poetry assignment got assigned to the class.

An analysis of Smagorisky (2010)'s data on Rita and Dirk's interpretation how their understanding of the poem had got heavily refracted through their recent lived emotional experience, *perezhivanie*. Rita dominated the interpretation.

Rita's feelings towards the speaker of the poem:

It is real negative of this guy not to think that once he dies things will be better. And he is thinking of all this bad stuff that is going on right now, and after he dies, and why he was put on earth and thinks of the positive things that he has done with his life....But I still think he should be afraid to die. But I don't think he should bring out all this sadness and this feeling sorry for himself, and I don't think that is right. I think he should be scared of what is going to happen to him, but not to a point that he is so negative towards everything (Smagorinsky, 2010, p.132)

Rita's view of Mary:

She shouldn't have been so negative, and this guy (the poem's speaker) shouldn't have been so negative. This guy didn't have a choice if he would die or not. But he should not have been negative. And she did have a choice....She wasn't dying of (an illness)....She was dying because of depression. I guess that is an illness, but she was so negative towards everything....It (the interpretation) was a way for me to say how scared I was of dying, and how I think everybody should fear death, and it hit so close to home for me that week (Smagorinsky, 2010, p.133)

When we analyze Rita's views, it is obvious that she found the experience of the poet intersects with her own experience with death. Rita's understanding of the poem and the ensuing analysis has got heavily refracted through her lived emotional experience. Although Keats died a natural death due to illness, Rita's interpretation of his poem had got influenced by her distress and fear arising from Mary's decision to take her own life. Her anger and disappointment towards people pitying themselves and being negative towards life in general, stemming from Mary's decision, has affected her interpretation of Keats very clearly. This influence shows very clearly when she says that "But I don't think he should bring out all this sadness and this feeling

sorry for himself, and I don't think that is right"(Smagorinsky, 2010, p.132). She keeps comparing the situation of Keats as well as Mary. Also the fear of death that struck her heavily recently seems to pervade her analysis when she says that "It (the interpretation) was a way for me to say how scared I was of dying, and how I think everybody should fear death, and it hit so close to home for me that week"(Smagorinsky, 2010, p.133)

Smagorinsky's (2010) data on the discussion about this poem in class further shows how different students have different emotional understanding and opinion of the poem. It also shows how the intense emotional experience she went through makes her understanding of the poem unique.

Reconstructed account of the discussion in class (As quoted in Smagorinsky, (2010)):

Rita: What does it mean, When I have fears that I may cease to be? Billy?

Billy: (tries to hide behind his hand) James: (attempts answer but does not complete it)

Rita: When you cease to be, you're dead. Why should he be afraid to die?

Jenny: Because maybe he hadn't accomplished everything he wanted.

Cindy: (points students to the biographical passage that accompanied the poem explaining that both Keats and his brother died young)

Rita: This is a hard one. The guy is afraid to die because his brother has just died young. He uses a lot of metaphors. The first line is about, he's trying to take all that he has in his brain and use a pen to get it out, so he's using a pen to get all this crap out of his head. What does he want to do after he gets the ideas out of his head, into books?

Alan: Why should everyone be afraid of death?

Rita: I've never been around death till this weekend when one of my friends killed herself. I think everyone should be scared of it. Nobody knows what death is, so you should be afraid of it.

Shondell: I'm not scared, but if I knew I was dying, I'd be upset because of how young I am. But I'm not scared of what happens after that. Lucy: A lot of people are curious, not really scared.

Rita: I think you'd be scared. Even if you have a really strong [religious] faith like I do, you'd be scared.

Shondell: No.

Billy: Say if you're an old man and you've did your purpose on earth, then you're not gonna be scared.

Alan: Maybe that's all you're meant to accomplish. What if you're 24 years old and going to die? Maybe that's all you're meant to live.

Shondell: You might be upset but not necessarily scared. Rita: (addressing two students who were talking quietly about fears of death) I gave you my attention [during your presentation], now give me yours. It pisses me off when people don't look at me when I'm talking.

Rita & Dirk: (explain the symbols in their drawing.)

Shondell: That's a good poem, Rita. (Smagorinsky, 2010, p.133-134)

Here Rita's opinions on death are refracted through her *perezhivanie*, that is, her lived emotional experience related to her near one's death. Her anger and sadness are also seen to get directed towards fellow discussants. She is upset that they do not give the same emotional significance to the idea of death as she does. More significantly, this discussion shows very clearly that each student's interpretation of the poem and idea of death is through personal feelings. Throughout the discussion, death is seen to get talked about less from Keats' vantage point, and more from each student's feelings about death, religion, and meaning of life. Smagorinsky (2010) observes that these discussions extended outside the class and occupied them for almost a week.

Analysis of this data brings out the role of emotions in learning since it shows very clearly how learning gets refracted through *perezhivanie*. If the opportunities to bring their emotional prism to their learning experience can engage students with attention deficit for a week, even beyond their classrooms, we can imagine the improvement it would bring to normal classrooms. Emotions, therefore are integral to learning.

Catharsis: The dynamic relationship of learning, creativity and emotion

The study further proposes that the nature and functioning of the dynamic relationship between learning, emotion, and creativity get explained comprehensively through Vygotsky's work on 'Catharsis.' The transformative and emotional nature of the concept of Catharsis as advanced by Vygotsky helps in illuminating the creative and emotional dimension of learning and in bringing in emotion and creativity to the discourse on learning.

A learning experience is both emotional and cathartic. In catharsis, conflicting emotions are creatively juxtaposed to form something that has not existed before. It is a creative process of conquering feelings that transform unpleasant emotions into their opposites (Vygotsky, 1971). Vygotsky discusses catharsis in the realm of art. Catharsis occurs as a result of the human need to discharge unused psychic energy and utilize the unrealized part of life. An artist's need to create is found to be the origin of catharsis. The contradictions present in a work of art, or a product of creativity, get juxtaposed to create a 'rhythm' which enables catharsis. In catharsis, individuals use previously stored emotions in analyzing the rhythmic pattern of the creative product or event. Engagement with the rhythm leads to relational, material and psychological transformations which result in an emotional release. According to Vygotsky, in catharsis, there is a complex transformation of emotions. In catharsis, conflicting emotions are creatively juxtaposed to form something that has not existed before (Vygotsky L. S., 1971). This transformation gives new ways of understanding which get distinguished by an amalgamation of both affect as well as intellect. Catharsis produces an emotional knowledge of the creative product (Connery, 2010). When learning is understood to be creative, we can attempt to extend this concept to the realm of learning. Marjanovic-Shane (2010) through an exploration of an after-school program, argues that catharsis is an emotional experience which is important not only for creation and perception of art but in transforming relationships in a learning atmosphere. She finds that in a classroom where children had volunteered as a part of programming robots when children play together, a new emotion which understands each other as creative collaborators overcomes everyone, thereby transforming their relationships. Be it a work of art or playful offer from a fellow student; there is a transformation, a transformation into a partner in a dialogue by overcoming personal feelings and releasing new energy. Catharsis is the process through which a creative process moves towards the future. Cross (2012) argues that Vygotsky's idea of the transformative potential of emotions gives us reason to rethink the creative nature of pedagogy.

With these in mind, when we bring the vantage point of catharsis to the process of learning, we can see that in the creative, constructive process of learning, the contradictions in the work and the emotions present gets juxtaposed in a certain rhythm. Engaging in this rhythm leads to relational, material and psychological transformations which result in an emotional release. The engagement with rhythm leads to a transformed understanding of the learning

process and what gets learned, and this understanding or knowledge is emotional by nature too. While the concepts of meaning making, ZPD, imagination, play, and *perezhivanie* succeeds in drawing out the creative and emotional dimensions of learning, Catharsis shows the movement of emotions in the plane of learning, that is, shows how learning becomes an emotional process. It is the cathartic nature of learning that essentially makes learning is both creative and emotional. It shows that the creative nature of learning and the emotional nature of learning must get discussed together; the creative nature of learning makes it an emotional process and the emotional nature of learning makes it a creative process.

Summary:

A careful reading and analysis of cultural historical psychology takes the exploration of the creative and emotional dimensions of learning further and shows that it will not suffice to say that learning has creative and emotional dimensions, but learning is essentially a creative, emotional process. Review of various concepts in Vygotsky's theory shows that there are multiple reasons why learning is a creative, emotional process. When learning occurs through mediation, learning becomes a process of creative reconstruction, thereby making learning an essentially creative process. Also review of mediation shows that learning is emotional since it gets socially mediated. The intimate relation between a person's semiotic means and her identity also makes learning emotional. The idea of ZPD shows that the learning environment itself gets created during the process of learning, showing the undeniable emotional nature of learning. The relational nature of ZPD also adds to the idea of emotional learning. Learning is understood as creative as the very idea of creativity changed to a collective process that could produce very ordinary products. The idea of creativity needs to be redefined to understand the creative nature of learning. The theory shows that imagination is a necessary condition for learning. It also shows that learning in early life progresses through play, which is essentially imaginative. These facts also point to the fact that learning is a creative process. Imagination is found to influence emotions and is in itself based on emotions. Therefore the creative imaginative process is found to be essentially emotional too. Importantly, learning is found to influence a person only through her lens of lived emotional experience, *perezhivanie*. The review proposes Vygotsky's concept of catharsis as a comprehensive way of explaining the dynamic nature of the relationship between learning, creativity and emotion. Review of the concept of catharsis shoes that learning

is a process where emotion is in constant motion: Learning begins, progresses and concludes in continuous emotional transformations.

Chapter 4

Conclusion

This study undertakes a critical review of ‘learning’ literature in psychology in order to examine the extent to which the significant learning theories address the creative and emotional dimensions learning. The review work is done within the paradigm of internal history of psychology. It starts out by asking if and how creative or emotional dimensions are embedded in learning; how significant researches, if not explicitly, but implicitly bring in these dimensions. In this study report, the rationale of the study and the analysis of learning research and theories go hand in hand. While the rationale of the study builds through the first two chapters, the analytical positioning of the review findings proceed along with the rationale from the very beginning of the dissertation and continues throughout the review. Based on the reviews undertaken in the second and third chapter, this study concludes that learning is essentially a creative and an emotional process and there is an urgent need to integrate learning with creativity and emotion theoretically as well as in praxis.

The review reveals that the theories that explain learning in psychology have mostly been blind to the creative and emotional dimensions of learning. The narrow theoretical framework of many theories, especially the early behaviorist theories, prevented their proponents from seeing or acknowledging the creative and emotional dimensions of learning. But a critical review of fundamental experiments and the conceptual writings that resulted from these experimental works shows how learning could not have progressed without the involvement of creativity or emotions. But a myopic gaze of their theories prevents them from seeing or acknowledging the workings of these dimensions in learning.

Review of Chomsky’s criticism of Skinner’s works as well as Kohler’s gestalt theory, brings out the undeniable role of brain’s creative engagement in learning. As the idea of learning broadens with the recognition of human agency and cognition and develops further through Tolman’s writings, it is seen that the scope for theories to see the creative and emotional dimensions of learning increases. While reading Tolman, a cognitive behaviourist, it is understood that learning involves complex cognitive map making and human learning requires such a process to be flexible. This flexibility in map-making requires brain to be constantly

creative. In other words, an imaginative involvement of the mind is precursor to maintaining flexibility of cognitive maps. So far the role of emotion in learning is concerned, Tolman's theory is evidently silent though it talks about human motivation and frustration influencing cognitive map making. The emotional dimension surfaced more clearly when, the social nature of learning was emphasized by Bandura's in 1957. But this theory still does not build the learning theory keeping both emotion and creativity at the centre.

As the social dimension came centrally to learning, the concept of learning got broadened in Bandura's theory, making the role of creativity and emotions in learning more evident. Creativity is brought to the centre of learning when this theory showed that learning progresses through imitation and symbolic processing. But even this theory fails to have any substantive engagement with the concepts of emotion and creativity as Bandura did not further develop on these ideas.

The present study shows that most learning theories failed to rise to a level where they can fully acknowledge or explain the role of creativity or emotion. However, as these theories broadened and started explicating the processes of learning by moving beyond just one or few classic experiments and enter into a deeper engagement with the concept and processes of learning, the creative and emotional dimensions started getting more and more space in learning theories both implicitly and explicitly.

Piaget's explanation of learning within a larger developmental framework brings out the creative and emotional nature of learning further. For Piaget, the very purpose of education is to produce innovators and creators. Analysis of Piaget's work showed that both learning and creativity have similar underlying cognitive mechanisms. To some extent, his theory showed the involvement of emotions in learning also especially, in the area of construction and organization of knowledge. Unfortunately, his theory did not go very far with integrating learning, emotions and creativity. Although all these theories directly or indirectly have shown that creativity and emotions play an important role in learning, they didn't forcefully argued learning to be a creative and emotional process. The analysis thus far is inadequate to let us critically reflect on how creativity and emotions are involved in learning. At the same time, we see that as theories broadened and started including the role of more and more aspects of the nature of learning, the

involvement of creativity and emotion in the process learning started to be acknowledged and explored.

The search for a more advanced and holistic theory which broadens the concept of learning critically looks at the underlying processes of human learning lead us to Vygotsky's cultural historical psychology. The review of Vygotsky's theory adds a whole new cultural historical dimension to the discourse and its concepts. This brought in a significant advance as well as a remarkable shift in the understanding of learning. With the help of the review of Vygotsky's theory, I would conclude that it is not sufficient to say that learning has creative and emotional dimensions. Instead, *learning needs to be understood as a creative and emotional process*. The understanding and the explanation of learning as a socio-cognitive process is incomplete without the involvement of emotions and creativity. In fact Vygotsky argues that learning cannot progress without the creative and emotional engagement of the mind.

Learning becomes creative in multiple ways. Since learning occurs via mediation, any learning process is found to be a creative reconstruction. Also learning is found to be creative since it proceeds by creating zones of proximal development through imitation. When the learning environment itself gets generated, creativity is found to be involved in learning through multiple complex ways. Most importantly, the review shows that while Vygotsky's theory brings out the creative dimensions of learning, it also transforms and broadens the idea of creativity. Creativity is found to be a collective activity and not the product of a single individual. It is found to be involved in ordinary everyday activities: an extraordinary novel product is not always necessary for a process to be creative. Learning is creative when creativity gets this newer wider perspective. When this theory elaborates that imagination is necessary for human cognitive activities as well as any learning process, it answers the question of whether learning is a creative process answer in affirmative. Vygotsky explained that children learn crucial concepts such as quantity, mathematics, and science through exaggeration, a significant feature of imagination, adding more support to the conclusion that learning is a creative process and showing how learning results from a creative process. Since learning in early years progresses mainly through play, which is an imaginative process, Vygotsky's theory concludes that learning is a creative process, even from the very beginning of ontogenetic evolution of cognition, self and knowledge.

The creative process of learning is also found to be intensely emotional since it is always mediated via social relations and also because the semiotic means which form the basis of learning and development is intimately related to the individual's identity and her idea of who she is. Since the review shows that learning proceeds only through constant human interaction in ZPDs, we conclude that learning is undeniably a product of emotional and creative process. When ZPD is explained as a relational process involving individual's feelings, learning becomes emotional. The review tells us that imagination is an expression of emotions or an internal language of emotion: construction of imagination bases itself on emotions and the constructed products of imagination influence emotions. When imagination is an integral part of learning, this highly emotional nature of imagination will make learning an emotional process. When Vygotsky points out that heightened emotions increases the complexity of creative life and that creativity widens and purifies emotional life in adolescents, we see a thesis of how a creative process such as learning would be emotional. Emotions run high, and relationships get transformed through a play situation, and when children's learning is mediated by play including free play, the process of learning becomes a default process of emotion.

According to Vygotsky, learning influences the individual only through her or his lived emotional experience, *perezhivanie*. The review stresses on the concept of *perezhivanie* to demonstrate the emotional nature of learning. Most significantly, the reviews clearly show that learning is a cathartic process. Vygotsky says that creativity results in catharsis. The products of creativity have internal contradictions. In catharsis, these contradictions are juxtaposed to create a rhythm which leads to an emotional release. In the process, there is a relational, material and psychological transformations which give the individual new ways of understanding. It initiates a creative process is also cathartic. In summary, learning begins by juxtaposition of contradictory emotions, transformation of the learnt material and eventually, a changed emotional as well as intellectual understanding of the material. The review proposes that an elaborate exploration of concept of catharsis can bring out the exact nature of the dynamic relationship of learning, creativity and emotion.

Since the review of Vygotsky's writings shows that emotions are involved in initiating, maintaining and even concluding the process of learning, I can safely say that learning is essentially an emotional process. Creativity is also found to be integral to learning and is

involved in all stages of learning. The review of Vygotskian ideas of learning, emotion and creativity clearly raise question about looking at creativity and emotion as merely dimensions of learning. Instead, it would be more appropriate to say that *learning is a creative and emotional process*. Explanation of learning must necessarily involve emotions and creativity. Using this theory, one can conclude that learning cannot progress without the creative and emotional engagement of the mind. Also the review concludes that the discussion of the creative nature of learning must go along with a discussion of the emotional nature of learning because the creative nature of learning makes it emotional, and the emotional nature of learning makes it creative.

Answering the final research question regarding the need to integrate learning with creativity and emotion, it concludes that there is a clear and urgent need for theoretical integration of learning with creativity and emotion. This conclusion comes out of three different themes that came out of the review. Firstly, the review so far has conclusively shown that the creative and emotional dimensions of learning get ignored by popular theories that explain learning. This study also shows that most of these theories held potential for seeing the emotional and creative dimensions of learning, but their narrow theoretical framework prevented them from doing so. Secondly, this segregation of learning from creativity and emotions in mainstream psychology is seen to be reflected in the psychology pedagogy in higher education too.

Review of a few popular psychology ‘textbooks’ have shown that chapters on learning have never discussed the emotional and creative aspects of learning. These books do not build necessary connections between learning and development. Learning is found to be portrayed mainly as a behaviorist process, and Vygotsky hardly finds any mention. More importantly, the third theme clearly shows that the prominent theories that inform teaching and learning today are those that do not raise creativity as a central concern. The mainstream academic curriculum has been found to segregate learning from its emotional and creative dimensions. As a result, learning and creativity have become separate curricular goals. Creativity gets widely recognized as an add-on or supplement to main pedagogy. In our curricula, creativity becomes something that can be taught and not as a desired goal of any teaching-learning process. The review shows that delinking creativity from learning and giving it a secondary position in curriculum planning and execution results in impoverished learning experiences of children in schools. The current curricular statements and practices neglect the emotional dimensions of learning. Recent

classroom studies have pointed out the deeper involvement of emotions and creativity in the very process of learning among children. It is because of these reasons that there is an evident need for theoretically integrating learning with creativity and emotion.

Limitations and future research

This study has its weaknesses. The conclusions drawn must be understood while keeping in mind these limitations. An important and visible limitation of this research is that it is based entirely on critical review work. While detailed review has helped in successfully answering the research questions posed, it lacks the input from an empirical study conducted in the field where learning occurs. Therefore the analysis here is limited to secondary data. Another significant drawback is that this review has limited itself to the internal history of psychology to answer the questions. There are numerous significant theories from other disciplines that have contributed to the understanding of learning and not involving them in the review would have deprived the study of new and useful vantage points to understand learning, emotion and creativity. But the limitation of time has prevented review beyond psychology. Also, the theory eventually tries to understand the creative and emotional nature of learning through the review of Vygotsky's cultural historical psychology and does not go beyond Vygotsky towards the two generations of neo Vygotskians and their extension of cultural historical psychology. Adding reviews of the extended versions of cultural historical psychology could bring out more nuances of the creative and emotional nature of learning. But again, the constraint of time limited the review to Vygotsky's original works and to a select few neo-Vygotskians.

The review also leaves behind a few questions and floats new directions for further exploration. It would add significantly to the understanding of creative and emotional nature of learning if theories and research from neighboring disciplines of psychology get reviewed. A Study focusing on theories from outside psychology to understand the creative and emotional dimensions of learning would extend the conclusions drawn from this study. Theories of John Dewey, Paulo Freire, Jean Leave, Etienne Wenger, Noam Chomsky, etc. would be a plausible exploration to expand the current conclusions. A detailed empirical study on a learning scenario, preferably a classroom to see how children bring their emotional prism to learn ordinary lessons in the curriculum could strengthen our arguments. The slow development of zone of proximal development in a classroom, preferably science and mathematics can be ethnographically studied

to explain the nuances of the creative and emotional nature of learning even where creativity is traditionally not expected to be. Also, the exploration of the same research questions through the framework of Cultural Historical Activity Theory is suggested to broaden the basis of learning and show more precisely how creativity and emotions are involved in learning. Finally, a detailed exploration of the concept of catharsis is suggested to bring out the dynamics of the creative, emotional learning process in more detail.

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