

Psychology of Learning

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Lecture – 7

Major Theories of Learning (Contd.)

Hello viewers, welcome back to this NPTEL course on the Psychology of Learning. In the last class, we were discussing about classical conditioning, operant conditioning with various principles and its educational implications. So, continuing with that now we will explore about the other aspects. Other aspects for example, in the classroom context like participation. Participation is very much required in classroom interaction because it requires attention, it requires motivation, it also requires the mental readiness of the learners towards learning.

So, classroom participation is to be encouraged and feedback (that is the knowledge of the result of the learning, the result for the learners for the improvements) is very important. So, feedback and participation are also very important components of the classroom interaction or the educational implication of these two conditioning theories. So, classical conditioning is that when unconditioned stimulus response is manipulated with the conditioned stimulus to create a conditional response. Similarly, same principle can also be applied in the classroom activities classroom activities. And operant conditioning is that the controlled response with the reward punishment system for shaping the behavior for behavior modification all these principles can also be applied in an educational context.

So, the learners needs the reinforcement to keep motivated to keep interest to mobilizes effort all these things are very much important. So, reinforcement is very much required then stimuli are effective in controlling the behavior. Different kinds of stimuli are also very important for controlling the behavior and modification of the behavior and encouraging for adopting the positive behavior in case of the learners. So, behavior can be measured to record the learning success. So, here as per the behaviorist approach that is learning should be measurable and observable similarly here in order to measure the classroom learning behavior we can also introduce different kinds of measurement tools to record the learning success and experiences. Similarly, overall learning may fade away after a short time. It can be forgotten if the exam is delayed.

So, for example, to keep them abreast with the knowledge present knowledge current knowledge. So, for example, in the classroom context, if the examination would be delayed indefinitely without any particular timing or any stipulated fixed timing, it may also discourages the learners to continue with the learning process and of course, sometimes it may also fade away. Some of the learning content may also fade away and thus learners may also become demotivated for keeping in touch with the learning content etcetera. And intermittent study is also more efficient for those who want to want to achieve the permanent learning. So, intermittent study like for example, intermediate from time to time different types of learning activities engaged in different kinds of activities these are also very effective

to strengthen the learning and performance to keep it for a longer period of time that is to achieve those students learners who want to continue with that content or subject knowledge for a longer period of time. So, intermittent study can also be promoted can also found to be effective.

So, these are some of the things some of the implications of the education implications of the previous review. Now, the operant conditioning here operant conditioning even though it is a behavioral approach it is a behavioral learning theory it has a cognitive perspective. So, psychologists they have they have applied they have tried to identify what is the cognitive perspective of these operant conditioning theory. So, when the people feel that learned helplessness one is the learned helplessness, learned helplessness is that suppose like for example, the moment individual feels that organism feels that the situation is out of his control and he feels helpless because he cannot change the be cannot change the situation and automatically got the victim of that the victim of situation. So, when the people feel that they have no control over the situation the factors the subject, subject stimulus or whatever.

So, they feel they behave in a helpless manner because it creates a kind of mindset kinds of impression in case of the individuals that you know the situation is out of control ok. So, so these actually so they feel when the moment they feel helpless they become inactive. So, this inaction also can lead the people to overlook the opportunities for relief and change. So, automatically for a longer period of time if this kind of situation takes place. So, this learned helplessness also demotivate the learners and make them more inactive.

So, for example, so that is why the thing is that how to avoid this the this is an example given here. So, in case of educational context how to remove these how to avoid this learned helplessness. So, for example, suppose with the recurrence like for example, with a recurring failures in case of children in case of students. So, they feel that no it is the subject is not my cup of tea or these factors are out of my control these and that. So, automatically the moment with repeated failure when they feel helpless they just they just leave the leave the impressed leave the impressed in studies and just left out down this is not my cup of tea I cannot do it a kind of sense of incompetence in inefficiency also comes in.

So, it has implications. So, how to remove it in the classroom situation in the educational situation that is the that is also another challenging perspective. So, in the observational learning you know Albert Bandura is thought to be the founder of these things Albert Bandura believe that the direct reinforcement and punishment could not account for all kinds of learning that occurs, but what about the children when they copy the behavior of the parents when no reinforcement is given. So, even in the absence of reinforcement the often the children they copy the copy the observe and copy the behavior maybe as a as a as a as in curiosity as a kind of new kind of behavioral you know behavioral learning behavioral learning. So, not necessarily that observation in observational learning every time the reinforcement has to be there.

So, without reinforcement or punishment observational learning can also take place. So, observational learning what are the basic principle? The basic principle is that it must direct the attention to the specific model in the process of observational learning actually the that means, the person the individual who observes certain people and select some of the specific people as the specific model as the role model. So, they direct their attention towards the specific model completely become attentive towards the all kinds of activities of that model. So, it is the basic principle of observational learning that must direct their attention to

specific model and must be able to remember what the person has done or said or done. So, as because they are closely observing the model they are also remembering that also supposed to remember all that their sayings their statements their activities their behaviors or the closely observe it monitor it and they remember it.

So, they need to be need to be able to convert those these memory representation into the appropriate action then after observing certain things they try to copy it they try to replicate those things in their own behavior. So, after that means, after observing after remembering and then try they try to copy it represent it through their own actions that is replicated through their own actions. So, here motivation definitely is more important because unless and until the person likes the model the model role model. So, he will not he is not going to copy it or observe it. So, only if the person finds the information useful put them into action of course, sometimes what happens the if the model that means, if the learner if the learner or the observant or the candidate or the individual observe that the model is being benefited model is being rewarded model is being reinforced because of so and so activities.

So, they feel more motivated primarily for example, you can say take the example of the sports person sports person suppose in different kinds of athletics and the sports if the if the certain players that means, youngsters and the players they observe that these kind of captain these kind of players are being rewarded with these these price money or these present these incentives etcetera they become more motivated closely observe their behavior their playing style their all the all their activities to copy it because as because the model is being rewarded. So, try they try to copy it. So, motivation is one factor either either not not necessarily that every time there must be in in reinforcement, but reinforcing behaviors are there. So, motivation it may begin with maybe with liking also you know with liking. So, if the motivation is very extensive then therefore, they for getting the external reward and incentive definitely the person will try to copy the model, but in case of intrinsic motivation.

So, they try to copy the role model just to be like that. So, that they feel happy that not necessarily that every time the models behavior is being rewarded, but it is kind of it can also induce this kind of intrinsic behavior intrinsic motivation intrinsic motivation that is to copy because now because as because the individual feels that observes that and feel decides that the model is a really you know really very good and very appreciative and very you know popular and based not because of our you know external reinforcement not because of any particular style or something maybe that from their behavior it is that they closely when they closely observe they find out something is very likable something is very pretty something is they unique is features is there which they observe and closely observe and find it out. So, that so, here motivation plays a very important role. So, now they are these are the key factors these key factors observational learning is the just definitely attention is the very important role attention then the attention then motivation then again then is that it is a this is kind of the retention that is called the retention is that the ability to remember ability to retain and remember the representation of that image and translate it into the action that is the production process that means, when we observe and we copy it. Then the motivation definitely the need to and the need to need for witnessing the need to observe and come and repeat the behavior because of some usefulness some utility some values etcetera.

So, observational learning can say it is a acquisition of acquisition of the performance of the behaviors demonstrated by others role models and copy it and replicate it in individuals own self. So, these are yes similarly so, classical condition classical conditioning operation conditioning the socio cognitive learning theory that is the observational

learning theory this primary three these three theories comes under the behavioristic school. So, the process we by which the experience of the practice results in relatively permanent change in our behavior potential behavior and moreover that behaviors are observable the behaviors are measurable and how we can utilize it in our educational setup settings. So, these are the implications of these primarily these three theories are very important theories there are other theories also, but we are not going into all the details. So, these theories primary theories of behavioristic school and it has immense implications for for human learning and educational context educational learning also.

Now, we will move on to move on to the cognitive school of psychology. Cognitive school of psychology is that for example, now the behaviorist they they were criticized later on because of their you know very molecular approach very you know very narrow approach of only measuring the observable behavior ignoring not being able to analyze the mental processes cognitive processes and maybe that maybe their primary experiments were on animal learning etcetera and how can they generalize because these learning findings animal learn experimental findings cannot be universalized. And moreover they also they could not explain certain humanistic concepts or human learning concepts like creativity thinking etcetera. So, they were criticized because it was more molecular it is more you know kind of more you know very oversimplification of some human learning learning and behavior. So, the which could not be which could not be relevant and authentic analyzing the different higher level of cognitive process cognitive or the thought behavior or the learning behavior.

So, they were they were criticized. So, now before that let us just understand the term psychology because you know psychology is definitely as we have already discussed it was a part of from philosophy and slowly and slowly and slowly it emerge as an independent discipline independent discipline. So, so that is the in the beginning the structuralist and functionalist they try to define it in more of structuralist they defined it in more mentalistic concept like mind and soul etcetera and functionalist they defined it as like the as the organism functions acts in an environment and then later on the human behaviorist come in. So, so in this way actually the this word psychology derived from the two Greek Greek words that is psyche and logos psyche means mind and the soul and the logos is the study of. So, it is the study of mind and soul that is the just for most primitive definition of psychology.

So, the founders like the at that period in the initial state founders like the Socrates, Plato, Aristotle these were all the prominent you know permanent philosophers and they defined psychology in this term. So, the father of, but however, later on it got modified and with the evolution of schools of psychology schools of you know different thoughts thoughts of and definitions of the psychology then then the modern psychology era of the modern psychology right. So, and the father of modern psychology started with William Wundt. William Wundt established a laboratory psychological laboratory William Wundt established the first psychological laboratory in Germany in 1879 and from there the era of the modern psychology started from the era of William Wundt psychological laboratory in 1879 onwards then the era of modern psychology started. So, now, here these two there are two questions are there for example, are we creative when we think more or think more on it or think less on it.

So, these are some of the questions the questions being raised by different psychologist and we can thinkers like why some students do well in the studies and where are the some others well in the sports. So, so many similar kind of questions arise like for example, if we think that learning psychology that means, learning takes place only through the observable behaviour measurable behaviour, but what are the answers for these questions like how people

think differently and when they become creative how can they become creative. So, then again how why some people they excel in studies and why others they excel in sports where is the so, how could it be possible. So, they they are from there started this kind of era of the cognitive psychology or cognitivism. So, here so, here as a learning can be defined as an observable change in the behaviour of specific organism as a consequence of the regularity in the environment of that organism.

So, in order to say that there is learning that has occurred in two condition one is that observable change in behaviour and the change in behaviour must be due to some regularities in the environment and learning is thus seen as an effect ok. So, some events some stimulus are the causes and learning has become the effect the result of that. So, so and this is an observable change in the behaviour attributed to the elements of the environment to the elements of the stimulus to the involvement of the experience to the element to the factor of practice to the so, that it can become the permanent change. So, as you can say so, there from there onwards and in bit just after the behaviourist school towards the end of the behaviouristic era. Then these were these the German psychologist the German psychologist they started criticizing behaviourist because of their molecular approach.

Because they the behaviourist they do not they did not have any kind of explanation for concepts like thinking or creativity or intuition or even language also they did not have any kind of satisfactory answers. So, the so, the they were criticized by the German psychologist German thinkers. So, at that moment the Gestalt schools the they are they few German psychologist like Kohler, Wertheimer and few psychologist they criticize the behaviourist school and they started the new new school of psychology that is called the Gestalt school of psychology. And they have they also they introduce they introduce the different definition of learning as a insightful learning how learning takes place in case of and they conducted many experiments with the chimpanzees etcetera. And they said that how learning can be insightful and there they also you know they also they also propounded that you know.

So, how do how the human beings perceive the situation because and the whole is more meaningful than the part of some of its part like for example, when you perceive the situation it is not they were not just about one stimulus response plus over another stimulus response not in a very segregated way rather in a very integrated way that is the whole way. And they have also formulated their different rules of you know principles of perception how do we perceive. So, the Gestalt means the whole holism holistic approach that is this is the total name. So, that is the they are the you can say that is the that was the beginning of the cognitive era with the German psychologist introduction of learning insightful learning then the laws of the laws of the perception and laws of the perceptions and in this way. So, from there onwards the cognitivism started.

So, cognitivism they it is a learning theory it focuses that yes behavioral manifestations or whatever it is observed it manifested through behavior that is important, but what are the underlying mechanism what are the underlying processes behind these things. So, therefore, the cognitive they say that the focuses on how the information is received organized and stored and retrieved by the man learning happens because at the end product is the learning and it is should be observable and it is measurable it is ok, but this is the output this is the result this is the effect, but what are the undergoing what are the processes behind this outcome that must be taken into account. So, that is a how the information is being received from the external how the stimulus that means, here the how the stimulus is being received how it the informations are are being organized how these are stored how these are

retrieved in the mind all these are the also equally important processes. So, mind is an information processor here we can say the mind cognitive is to say that just like the computer mind is an information processor that we receive the information stimulus from the external world that is that input then we process it in different ways and means then we take the decision then these are being manifested. So, learning is an internal mental processes.

So, the cognitive is that they do not deny completely they do not reject the completely the behavioral manifestation, but they say that in cognitive processes internal mechanism on information processing cognitive processes are equally important. So, according to these perspective learners are actively involved in this process of information processing. So, that is a knowledge memory thinking problems are being creative thinking reflective thinking all these are the different mental operations mental processes. So, these areas that has that cannot be ignored. So, these areas actually these are the these comes under the scope of cognitive era of psychology cognitive interpretation of psychology.

So, that means, both the physical behavior as well as the cognitive behavior and the cognition that means, they explore the many concepts starting from the learning simple remembering rote learning to creativity to problem solving so many things. So, cognitivist they objected to this behavioristic approach of over simplification of anything and the and the establishing everything every complex behavior human behavior just in terms of stimulus response connection. So, it was out rightly rejected by the cognitive psychologist scientist and knowledge is an internal processor and just like the just like the computer human brain processes many processes many things from the receiving from the environment and it is not just. So, the cognition or the behavior or the learning is not just the product, but it should take into account all the internal processes. So, then there are there were there were the very many controversies regarding you know whether knowledge whether intelligence is there at that point of time intelligence was measured through different IQ test etcetera etcetera.

And it was only the IQ scores are the productive oriented what about the reasons behind it processes the mechanisms underlying mechanisms and processes. And suppose if two individuals have got the same IQ score can we say that these are the these two individuals are of same potential are their thinking process is not different. So, many so many challenges so many controversies were there, but anyway knowledge acquisition learning all these mental processes are are the internal processes is ongoing processes. And then the psychologist they try to understand how these information are being processed before it before these are being reflected in behavior or manifested through behavior as a product. So, cognitive see you can see the cognitive is learning this stage that.

So, here we are focusing primarily on learning. So, they have they have contributed significantly in different domains, but automatically when we will be discussing about the learning. So, definitely all these mental mechanisms will come in our way. So, we will be discussing later part that is motivation thinking etcetera. So, cognitive is they say that the way we learn is determined by the way our mind takes in stores processes and then access the information.

Like for example, starting from whenever we are receiving an information because on daily basis we are interacting we are encountering n number of stimulus, but we are not attending to everything or we do we are not remembering everything or we are not you know processing further to retain further to retain that information. So, here thing is that you know to learn something we need to devote certain attention, we need to take into consideration, we

need to attain it, need to process it, need to perceive it and need to process these things processing thing effectively. Like for example, our learning process it is a process unless and until we attend it we listen it process it store it practice it we cannot retain that information then only we can have the access to information. So, when we learn the new things our brain brains are able to transfer the information that we have already learn and apply the information to a new situation. Like we have already discussed that whenever you are learning the new thing automatically it is an internal mechanism that automatically our brain connects to tries to retrieve the old learning past learning from our repository like past experiences past learning any information relevant to this stimulus or context brain tries to retrieve those thing and try to relate it to the new situation learning or the learning things or new problems.

So, it always this is the it is an internal mechanism. So, when the when so, even when the student is trying to learn something new there is usually some such a prior knowledge. So, and to anchor that new information as the learner tries to connect to the new knowledge to the old one and this is the basis of cognitivism then connecting to the old learning old experience old learning experiences trying to connect it relate it get the meaning out of it and in case in case he is not being able to understand the whole thing then restructure it change the cognitive structure reframe it restructure it and reset it reconstruct it then only to make it more meaningful because then new learning takes place. So, the mind is basically an internal processor and that the users are internalist the users and that the users our our internally stored information that is why it is called that if the childhood in that early stages in the childhood at the early stages of school learning if you are being exposed to very enriched environment. Enriched environment means with varieties of stimulus exposure types of learning learning resources etcetera definitely then our backup backup experience will be very very good.

So, that for the with with the developing stage when we are exposed to new learning then we can we can better understand and the new we can quickly adopt to the new situation and create the new learning and construct and construct the new learning content. So, so primarily so the cognitive is a primarily focus on the cognitive mechanism. So, it is the primary foundation is for explaining how we are learning and also answering the question how we are learning why we are learning and when we are learning all the mental mechanisms. So, explaining how we learn the things and research also you know the design the learning learning experiments designs course content etcetera. So, how to maximize the benefit of the learning experience how to make the learning most effective how we receive organized store and color the information in our mind and again just like the computers how it process how it can have the access to the information how it can process the new information how it can it can store it.

So, here primarily it is primarily so the how the new information is stored properly and permanently and how it can be retrieved whenever it is required. So, that is it all all the things requires that means, the whole learning processes mechanisms and the and the you can say the brain the brain the the different parts of the brain engaged in this kind of activities. So, you can say you can say you can start with the that the brain how the brain functions, but here two things are that the neuropsychologist they they moved on towards the how the towards with the brain functions and how the different loops different parts of the brain how it functions how it is responsible for different kinds of active learning activities etcetera. So, the neuropsychologist they tilted more towards the the brain science new brain science and they are called as the they are called as the they adopted the brain metaphor and they are the neuroscientist neuropsychologist they try to discover identify that the how the brain functions and as a result how learning takes place. Whereas, the other other group of the psychologist they they adopt the computer as a metaphor computer as a metaphor and try to simulate try to

find out try to try to understand the whole information human information processing processing mechanism while observing the computer computer how computer received the information how the input takes place how it is being information is being processed all these thing what are the mechanism.

So, they adopted the computer metaphor and try to analyze these human learning processes in a information processing approach. So, automatically two type two basic major approaches one is the information processing approach of learning understanding and intelligence another is the cognitive approach that the neuro neuropsychological approach neuropsychological approach of the learning that is the brain with the brain science with the brain metaphor. So, here we can say so, cognitivism holds the persons behavior that is more independent is more behavior is more independent on the insight of the relationship. So, how this whole is more meaningful than the some of it is parts mental life encompasses the cognitive affective and connective symptoms here we have already as we have seen that the mental life that is the mind mind that means, mental life that means, our mind deals with all kinds of information all these information. So, that is a combination of cognitive information that is the intellectual information affective that is the emotional components emotional information emotional things are very important.

Conation, conation that is our willingness our passion these symptoms are also there and moreover definitely the psychosomatic information's are there developmental perspective is also there. So, the cognitive symptoms that means, automatically it takes into account as you can say all the cognitive psychomotor affective emotional connect connective that is the willingness all kinds of things as you can see in the picture cognitive psychology takes into account all this perception attention to perception to human intelligence general intelligence type of intelligence then again the theories are also they are with regard to human intelligence. Language language for the communication language for the learning thinking and problem solving memory so, different different cognitive. So, in the I mean human cognitive architecture so, there is the different process different mechanism different processes which are you know which are being combined to combine for different kinds of learning exercises and these and whenever we come we some kind of significant learning takes place or we learn something or we come to a conclusion we come to a solution then all kinds of the human cognitive processes acts and acts and performs and interacts with each other then only learning becomes a possible. So, here yes then there are different cognitive psychologist emerge.

So, towards the end of the behaviorism also the new behaviorist like the Tolman Edward Tolman then there after Bruner Bruner some German psychologist, Gestalt psychologist I just told you right now the Gestalt psychology they started off reviewing the whole thing mechanism and they are also considered as the considered as the new behaviorist and they are actually instrumental in instrumental in changing the changing the shape of shape or definition of the psychology and bringing to the bringing this cognitive theory is developing the cognitive theory. So, Tolman is actually considered as the pioneer of this thing. So, he said that he is for every learning Tolman defines that for every learning there must be some motivation is there there must be some motivation which governs which acts from behind that motivation as the key to transmuting the expectation into the behavior and without motivation no action no action can be no action or no learning takes place because all our behavior all our learning are goal oriented he said that. So, goal oriented is again it is backed up by the motivation human motivation. So, learning inform involves the transformation of information in the environment into knowledge.

So, learning therefore, occurs the new knowledge is acquired for all the existing knowledge is modified with the experience. So, these are the primary focuses of cognitive how people think, how people understand, how people differ from each other individual difference exist, how people know. So, and what are the internal mechanism what are there is again here the concept is that Galton was the psychologist who first discovered this you know here the concept individual difference difference every individual learner is different from the other. So, individual difference. So, in the cognitive era cognitive era with the cognitive theories more diversity more uniqueness.

So, many things in many so, many you know so, many different views and perspectives are also emerged. So, the Gestalt psychologist as we have already discussed just as the Gestalt psychologist are only the group of German psychologist who criticize the criticize the behavioristic molecular approach and they say that whole is more meaningful than the some of it is parts. So, that is the Gestalt in German it may literally means the shape the figure the total figure and they believe that the learning is the result of the good perception good perception the whole then the whole and we get the meaning get the meaning in the from the whole situation rather than we go on adding the stimulus one stimulus over with the another stimulus one by one. So, later on they also they propose certain principles of law principles or the laws of perceptual coordination which are actually inherent mechanism, human mechanism, individual mechanism which actually governs our perception. So, they we are not going into the different principles principles of perception, but you know from their from their some their school insightful learning insightful learning is that whenever suppose we are we have been trying certain problems to solve it again and again, but we are we are not being able to solve it then sometime after sometime we we just leave it and we relax and we shift our attention to something else.

But all of a sudden even though we left the topic at the moment and we are engaged busy devoted to some other things, but our brain is still working on this and all of a sudden the idea comes to our mind like it is like just Archimedes' 'ah' kind of thing. So, even though consciously we are rejecting that concept and diverting our attention, but some somehow the brain is working on it and got the idea that cause some sort of insights takes place. So, learning can be insightful. So, their approach gestural schools approach that learning can be insightful and whenever we observe certain situations. So, we that is even small features small stimuli in that environment is also important we cannot say that these are the important things these because of this learning takes place, but every minute details of that situation situation is very important valuable and whenever we perceive that situation and interpret in a more meaningful way.

So, the holistic approach whole situation is more meaningful than part. And I used the example is that from the gestural perspective like for example, this is the classroom. So, how will we define classroom? Classroom is not just the blackboard the tables and chairs and computers and this and that. If you define the classroom is equal to number of chairs number of tables number of students so and so etcetera it is meaningless. But when we perceive the classroom and define it we perceive as a whole picture of the whole classroom taking everything together. So, that is the meaning of the gestural: that the complete picture complete the whole approach whole scenario whole figure whole situation that is more meaningful and it gives it gives us the meaning of that. So, I am just stopping it right now. And in the next class we will just discuss with other theories of the cognitive systems. Thank you very much.

