Psychology of Learning

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Lecture – 3

Psychology of Learning (Contd.)

Hello viewers, welcome back to this NPTEL course on the Psychology of Learning. So, in the last class, we have already started discussing about the processes of learning: how learning takes place and what are the factors that influence learning. So, today we will continue with that. So, I think we have discussed about the effective learning. Now today we will just have a discussion about the outcomes of learning.

Effective learning is something we have already discussed. Our discussion included what are the factors contributing significantly to the effectiveness of learning like the culture, classroom culture, then environment, our experience etcetera. Now, let us see what is the result of effective learning, what is the outcome of effective learning. And you know, learning has certain outcomes. That means, learning is having the outcome of either in terms of performance outcome, in terms of knowledge, in terms of some skills, in terms of some kind of ability development, skill development. So, there are many facets of effective learning outcomes.

So, let us discuss for example, first thing is, connected knowledge. So, we have already discussed that learning brings not only the changes in the behaviour, but also learning helps us in developing restructuring our cognitive as cognitive schemas, cognitive concepts and ideas. So, we try to connect to our past experience and try to resolve the present situation and so, challenges and problems, retrieving some of the clues, some of the tips from the past experience learning experiences. So, here you can say that learning is a more you know interconnected network. Interconnected network with development of the performance, performance skills, aptitude, abilities, etcetera. So, learning is more connected knowledge.

So, in every novel situation we definitely knowingly or unknowingly, consciously or unconsciously we refer back to our backup that is our past knowledge, past experience. And moreover and by retrieving it and trying to capture it is capture the key words, key clues from it we try to understand the present situation all the content of the basis of that past learning experiences. So, in this process also by reading it out the present problems or the content we try to find out the key words, try to find out the you know tips of you know how to resolve it, what are the key touch points of this knowledge. So, in this way we develop a network that is network, network connecting our past learning to the present ability, present content, present and in which context we are learning. And trying to trying to that means, acquire the

knowledge from the resources available we also try to develop our own cognitive strategies that will come to later that is metacognitive strategies, cognitive strategies.

  Then study habits, study habits with different kinds of you know different kinds of learning skills, learning styles, learning strategies that would also help us. So, more connected knowledge here we can say that means, after learning something extensively after certain period of time it will we will develop a kind of a complete or holistic pattern of knowledge not just about isolated something some information, but rather a holistic pattern of knowledge, more connected knowledge, more holistic knowledge. So, that we can explore individually we can explore different facets of its application applications. Yes of course, knowledge construction, knowledge interpretation, getting meaning out of it and performing definitely it is very individualized. Every individual learner has got his or her own style of learning, interpretation,   construction   etcetera   similarly.

  So, every learner try to connect the past knowledge with the present and with the plan to the plan to go ahead with the future plan and again how to cope up with the present current requirements in the scenario in the learning context, in the may be that in examination context, in classroom context, different context. So, we develop a more connected knowledge platform. Wider range of strategy depending on the content, depending on the context and the requirements like the learning objectives or the instructional objectives we also try to formulate different strategy. Sometimes we frame some cognitive strategy, sometimes we try to formulate some contextual strategy like some of the contextual factors we take it as a clue to remind us to help us in reminding and driving the information. Similarly, there are also different strategies like mnemonic cues are there some you know concept mappings mind mapping   strategies   are   there   that   we   will   discuss   later   on.

  So, these are some of the strategies we also develop and we start using that wider range of strategies then the greater complexity of understanding is slowly and steadily slowly as we grow up as we move on from class 1, 2, 3 to higher education slowly and steadily in the developmental process itself the content of the learning also content also becomes slowly and gradually complex. So, greater complexity of understanding is that the it is a more kind of an inductive approach to learning inductive approach to knowledge construction. So, gradually slowly and steadily we try to develop the understanding of how to go into the depth of or try to understand the complex complexity of the difficulty level of the content or difficult content etcetera. So, greater complexity of understanding even in understanding comprehension also we go into the depth of you know depth of understanding some of the nuances of learning content some of the critical points some of the viewpoints perspectives. So, here also in the same time we also develop gradually develop the critical thinking skills like it is not that whatever the author has given how what of the content has been given to us and we have just remembered it and try to deliver it is not like that, but we try to evaluate the content we try to analyze the content and sometimes maybe that it if it is required we unlearn certain things we remove or reject some certain things and on the basis of some clues and some ideas then we try   to   reconstruct   we   develop   our   own   learning.

So, enhance action appropriate to goals and context then we try to map it like whatever you have learnt then we will try to map it to what extent it will be helpful in preparing myself for this exam or that exam or for achieving my goals relevant to that particular context. So, enhance action appropriate to the goals and context. As per the requirement of the situation and the goals that we have set or the set for our self and it has certain criteria the criteria is like for example, preparing for the JEE exam, preparing for the NET exam, preparing from the medical exam. So, these are different categories different types and different criteria's are there for you know preparing our self and achieving the scores. So, that actually that helps us then we can map it the knowledge that we have acquired and what else is required and then how to prepare our self for relevant for that context and the goals achieving the goals.

Then increase engagement and self direction slowly and steadily then we can isolate we can differentiate which learning is of what type like for example, whether it is only the certain things are only for information sake for general knowledge for you know for an increasing our you know knowledge outreach etcetera or something which is which we need to learn in depth. So, and sometimes also we learn for learn we go through or we study we learn for some certain personal you know personal requirement or maybe that personal enrichment, personal satisfaction. So, like for example, for pursuing our maybe art and culture or literary interest etcetera. So, increase engagement then, but slowly we can differentiate which learning which content is meant for what and we can give a self direction to us like whether to go for academic career oriented, classroom context, classroom related content, how much time we should devote to them, how much time we should devote to prepare for so and so exams. And what else how much time we should engage for our own development, intellectual development, our intellectual need satisfaction in terms of maybe that in music, in literature, in language learning, in some other skills cognitive maybe writing skill for to for improving   the   writing   skill.

So, increase engagement even if it is a learning process either even the in observational learning also we are learning even in trying out trying out some trial and trying out some manual skills also we are learning. So, there are different processes of learning, but then gradually we can map it we can identify it we can diversify it and we might map it that how much time we should devote to which aspects of learning. So, that is increase engagement and self direction there. Now gradually we will be capable of giving a direction to our learning process whether it is a formal learning, informal learning or maybe career oriented learning, workplace   learning   or   what   type   of.   So,   then   we   start.

So, it here slowly what happens as increase engagement of the learner as per the requirement as per his plans and the goals and giving the self direction slowly as we grow up slowly we become independent that is. So, here now our self regulation self academic self regulation gradually develops how can we regulate our own learning behavior, academic behavior, assignments etcetera and you know decide the time slot, decide the preparation, decide the whole time table for ourselves. So, increasing engagement self direction. So, if we carry on this kind of activity then slowly and steadily we can accrue the academic self regulation. Of course, we have already discussed about the reflective practices, reflective

approach is that whatever we learn whatever we learn or read or go through or come across through audio video or whatever we need to reflect on that we need to reflect on the content like we try to verify kind of aptitude like a temperament like to we need to verify it is automatic after certain practices it becomes automatic like whether whatever we have heard is it true, is it relevant, is it authentic, is it the it is actually factual or it is just fake or to what extent it will be applicable to other situation, can we generalize the situation all kinds of all these kind of analysis, analytic or questions queries that we ask.

So, that is the more reflective approach that whatever we are exposed to or learn we come across we need to reflect on that reflect on that for on our own understanding for understanding its complexity and for our own usefulness do it really help us usefulness and its authenticity and its authenticity and how we are going to utilize this. So, more reflective approach to learning whatever type of learning or the content we are going through more positive emotions and affiliation to learning yes definitely. So, suppose in a day we come across different types of contents maybe something different subjects also in our even in the classrooms in the colleges and schools we come across different types of subjects some subjects we love to learn, we love to listen, we love to go through and prepare, but some other lessons it seems to very difficult to us. So, in that context so, automatically we develop a kind of you know liking a positive emotion towards the subjects that we like to study. So, more positive emotion help us or you know mobilizes us towards developing an affiliation to that that particular kind of subject learning.

So, but however, then slowly and steadily then we find out we discriminate to identify now this subject is for me that subject is not for me it is a I am not a technical person I am I am a social scientist I am a linguist I am an artist something like that. So, here slowly and slowly as we affiliate our self towards that content knowledge content or the some type of learning subjects then we develop a kind of positive emotion that is the passion or positive feeling that we feel good and we become keen to understand to learn more in that field. So, positive emotion and affiliation slowly develop as we as we love as we as we start liking the content as we start liking maybe the context also maybe the classroom environment maybe the peers maybe the institute maybe the schools maybe the peers. So, as per the these factors these factors which contribute significantly to our learning process, the moment we start liking these subjects these factors then automatically we develop a kind of affiliation affiliation and positive emotion. So, more developed vision of future as a self learner then slowly as we grow up from the college to higher education to our research education etcetera slowly and steadily we draw a future plan for ourselves.

That is the vision our our vision for our future maybe in academics maybe in all the organizational set up maybe in self employment maybe in EPSC exams whatever. So, we draw a vision and prepare our self like we always visualize a kind of ideal self that we would like to be in future. So, that is our ideal self future self that we visualize and accordingly we try to prepare our self and in this process we also become a self learner independent learner less often we depend on others. We because and we search for the resources we search for the strategies we search look for certain kind of you know guidance and something and we try to

try to manage try to get this kind of you know resource persons even mentors etcetera and try to be independent by searching by getting the resources and by going through the resources and managing the resources and you can say leveraging the resources also. So, greater facility in learning with others then slowly and steadily we also develop different learning styles like for example, maybe that in the initially we are very we are very happy very you know very accomplished in self learning ok, but sometimes we need to work with others we need to participate in something also slowly and steadily we also learn slowly on the cooperative learning strategies collaborative learning strategy maybe in the problem learning problem solving learning strategy.

So, sometimes we also make our self more flexible in terms of learning styles and strategies then so, that we can we can very comfortable and convenient in learning with other sharing with sharing our ideas with others helping out others like teaching others in a group learning. So, nowadays also nowadays that means, in new education policy and even 20th century learning so, cooperative learning collaborative learning this kind of learning skills learning environment context and pedagogies are being more emphasized because you know ultimately the group outcome group outcome is more substantial more authentic and more useful than the individual learner, but that does not mean that individual learner they will not do the self learning self learning. Now, that is not the issue, but even if you are comfortable in self learning you also need to learn with the with others share your knowledge with others and help out others like in the group learning not only that the skill or the good learners or the best learners or the good students are being benefited because they are when they are explaining it to their peers that they are their maturity their learning capability their skills get more enhanced more matured similarly the poor learners they are they are also getting benefited. So, in this way the mutual learning takes place it does not mean that in the group learning only the poor learners get benefited and others are not, but the good learners the better learners and good students when they share they explain they clarify the doubts then their competencies also improve. So, then more sense of participation in knowledge community.

So, here it is a kind of you know now slowly and steadily again it is a kind of attitude also slowly the learners we will develop a kind of group learning attitude knowledge that means, we are learning community develop a kind of participation sense of participation sense of sharing the knowledge helping out others knowledge then in information and sharing the information helping out others in resolving the problems. So, it is automatically this kind of knowledge sharing the knowledge and developing knowledge community and participation and you know peer tutoring you know you can say peer tutoring and even mentoring your juniors etcetera. In this process actually we that means, the learners or the individuals they learn other skills like the social skills emotional skills this kind of skills also learn. So, that is why in learning context socio emotional environment ecosystem is very important. So, now this is the cycle actually initially we have already discussed first thing is the learn about the content.

So, content is definitely is important and applying those content in different context in

different context then do practice it make it as a part of our day to day practice, but from time to time we review the content because maybe there is something new is coming up something is obsolete something is outdated something is not relevant in the present context. So, in this way then the in the larger perspective you can say review the whole learning process not just the content, but the whole learning process here comes our pedagogy our andragogy etcetera the way we are learning. Now with this e-learning environment post e-learning on environment or online education the whole scenario has been changed. Now not only that we are being exposed to technology in a big way, but also we are also facing different challenges different issues also. So, the reviewing the whole learning process and who are the major stakeholders not only the learners, but other kinds of factors also the environment the ecosystem the you know content then the evaluation processes everything.

So, the whole learning process has been reviewed. So, the it takes into account starting from the content to context to the stakeholders to their even the text stakeholders here the stakeholders are the human beings definitely individual differences is there their choices their emotions their likings their you know mental health everything is there. So, reviewing the whole learning process then learn about the learning then we come the we become very clear about how individual learner learns or what is the how to what extent the individual difference exist and what how to map it what is the range of individual differences variations and how to cater to the individual needs of each and every learner. That means, how to personalize the learner even in the online platform even in the classroom. So, even in the classroom that is where the classroom size like the teacher student ratio and the classroom size in terms of student strength.

So, that has been limited to 1 is to 30 something like that. So, that so, that the in the with the specific period teacher at least give individual attention to every learner. So, now, here slowly by reviewing the whole learning process we learn about the learning process, how learning takes place, what are the variations in learning, what are the types of you know what are the types of problems and challenges that the students or the learners are facing. So, it is about knowing the learning as a process not just the outcome not just the effect, but is the process. So, learn about learning is learning is a continuous process.

Now in the process in the process what are the factors, what are the issues, what are the strengths and what are the weaknesses and how to customize the learning as per the requirement ok, how to customize the learning. Then applying then apply to the future learning. So, after all this kind of analysis and evaluation then we not just to try to customize it, but also we plan for the future learning maybe that in future we need to diversify in this direction that direction. So, this is the ongoing lifelong learning education yes with the major shift of paradigm like with the major shift of paradigm from one you know from teacher centric learning to student centric learning to you know techno centric now techno centric learning that is deep learning approach and other kinds of with the major shift in the paradigm of learning definitely the whole cycle the learning process also changes. So, here now the learning learning about the learning that means, learning about the learning means learning as a no understanding the learning as a process.

So, reviewing how we learn most affected every individual has an individual learner has his own effective strategy strengths and weaknesses maybe some are visual learners they learn based better in a very way learn and remember mostly through visual learning visual learning when they go through the books and the visual content etcetera. Some are auditory learners, some are you know some are you know some are sequential learner that means, step by step they can remember, some are holistic learner, some are you know some are you know experiential learners like they learn faster than when they conduct themselves or conduct the experiments and participate or you know participate or share the knowledge with others some are the individual learners some try to learn it learn maximally in the group setup. So, reviewing how we learn most effectively again it again there are the different mappings like for example, how what is my favorite or most effective learning strategy or style that in which way if I learn I can learn based I can I can remember maximum I can perform I can understand better. So, that is the thing, but that is not just about the content. So, content, but is in the context also in which context I learn better in which subject in if I am exposed to learn this subject a   math   subject   or   science   subject   or   social   science   subject   in.

So, again subject nature of the content is also important. So, maybe that for remembering the subjects like history and geography I need different strategy and for instead of and for solving the problems in the math. So, different subject nature of the subject also requires different strategy. So, reviewing how we learn most effectively and it is not just universal and general, but also in subject wise. Exploring our thinking and problem solving exploring our thinking and problem solving abilities reviewing the beliefs about the success and again success like for example, when we are preparing ourselves for different kinds of targets targets this   exam   that   that   competition   that   job   interview   that   this   and   that.

So, we like we map our preparation our skills our level of understanding preparation etcetera with the requirement of the job. So, in this way we keep on reviewing our self our own performance. So, reviewing the belief about the success then we also map it what is the percentage of success in this context maybe again it depends on the number of vacancies they are there, what is the degree of competition, how many participants are there, how many how many attendees are there. So, many things and what type of questions are being asked. So, this is automatically we review our confidence our belief that and try to map the rate of success possibility   of   success.

Exploring the approaches to anxiety provoking start some task are you know some task it is these are anxiety provoking means very difficult maybe stress very stressful maybe because in the in which context actually suppose if it is a practical practical task problem solving task which has to be done in a particular in a context natural context in environment. So, that may be that environment itself may be you know very like for example, the people who are working the defense in you know in army context. So, they are also being exposed to different kind of task, but that situation itself is very anxiety provoking like it is a kind of a tense situation. So, exploring the approaches to deal with the anxiety provoking start task if the if you feel that this task is difficult it is stressful it is you know it is very difficult to go through or to handle

or to manage then how to prepare how to prepare for it. So, managing the feeling that impaired learning yes in the process of learning also we are also getting so many obstructions and you know our because to catch all to keep our attention on the right track for a longer period of time to enhance our focus of attention because focus of attention can only bring us the better understanding.

So, and in between also there are other factors which also disturbs our mind maybe emotional factors maybe social factors some other kinds of factors. So, how to manage that feeling because emotion we have already discussed that cognition emotion that is affection and the behavior or the conation behavior these are all interrelated because we are the single individual human being and all these are our internal factors we cannot isolate brain a cognitive part separately from our emotion. So, managing the feelings and feelings and we have to find out that what are the factors that actually obstructs that impacts in my learning process and we have to overcome if they overcome this here our we need more kind of intrinsic motivation more conation we that is willpower passion all these things. So, practicing our approach to difficult tasks difficult tasks and the easy task are taking our self through them that means, difficult yes content difficulty level is also there as we grow as we are exposed to different kinds of competitive exams prepare our self for you know professional courses etcetera we are exposed to different types of task maybe. So, we have to identify how to deal with that suppose in competitive exams we can manage with general knowledge and English and etcetera, but when about it is about the quantitative.

So, but how to prepare for that? So, we need to practice this how to approach this kind of difficult task then examining the responses to the experiences of failure. So, here another thing is a failures are actually the learning lessons learning lessons. So, you know failure is that you instantly it gives a kind of bad it creates a kind of bad feeling or you know sense of incompetence or sadness something like that, but when we reflect on reflect upon this failures as an experience the when we start examining the whole situations or the whole our actions reactions responses that causes the failure then it can be a very good learning exercises learning experiences. So, examining the responses to experience of failure how do we analyze the failure failure experiences etcetera that is why it is called that failures of the pillars of success. So, unless and until we fail somewhere we because these are also learning it also taught also taught it also teaches us some kind of strategies.

That means, then we could realize that oh we should not have done these thing and or better maybe that these these these skills these strategies or these approaches would have been better. So, failures are actually the learning experiences experiences or reflective learning experiences that actually teaches us that actually teaches us how to improvise our strategy how to improvise our skills then analyzing the contributions to the group task. So, when becoming an independent learner also also we should be a part of the group learning process community of learning we develop our different learning communities and in group group suppose we are when we are a member of the group and we are sharing our knowledge and experiences and all kinds of ideas with the group members analyzing our contribution like in which way suppose we are working in a team in a group. So, even if it is a work group or team study

group or research group or whatever what should be my contributions. So, if you start thinking of oh my contribution is everybody they are doing in this way that way.

So, my contribution should be a little bit different and let me that means, let me try to make it as unique as possible. So, analyzing the contributions to group task what is my contribution what are the other contributions they are what is their ideas and experiences how to you know that means, how to comprehend make it more comprehensive and useful not only for yourself for ourselves, but for others also. So, these are and this is a then we will be discussing there are many types of you know learning approaches and styles and styles and the different types of learning styles and you know reflective and even skills also we need to develop that is reflective thinking skills critical thinking skills all these things that we will discuss as we will proceed in this course. So, how the students learn and think there are different principles that were like for example, how the students first is principle is the students belief or perception about intelligence and ability affect their cognitive functioning and learning. The students like for example, a class 9 student ok.

So, continuously students his belief and perception like how do he how do he how do he perceive how does he perceive himself as per the content of the class 9 math subject or science subject is very difficult. So, automatically it gives a kind of impression about his own competency about impression about his own efficacy. So, students belief or perception about the intelligence and the ability that affect their cognitive functioning and learning. So, that means, how to engage themselves how to perform how to solve the problem these are the various tasks at hand in a particular class grade context. So, how do they how do they perceive those tasks its difficulty level and they map it with their own existing knowledge and ability.

So, in this way the that effects if he feels that you know I am confident I am confident I can cope up I can with hard work I can complete it I can do it etcetera. So, and he if he thinks that if he thinks himself as a yes I am I am an intelligent boy suppose his self belief is that I am an intelligent boy. Yes of course, there are sometimes you know overestimate or you know over is there is some people we of course, overestimate also that is the another issue of you know gap. So, students belief or perception about the intelligent how intelligent they are whether they will be able to cope up with the content or not and what is the difficulty level of the subject. So, accordingly their performance that they are learning will be influenced.

So, intelligence and ability can be developed through effort and experiences with applying different strategies. See here the thing is that if the student thinks that yes I am intelligent, but I am not being able to solve it means he will make put more effort or maybe that he will get some additional help from the seniors or maybe that he will do will take the help of the teachers or maybe that with the guidance of tutors and teach class teachers he will apply different strategies. So, he can discuss with others or for the guidance. So, with the, but with the basic intelligence general intelligence average intelligence and ability the individual skills and performance can be improved with more strategic approach more effort more you know more you can say study skills study effort and strategies effective study strategies that is one principle. Principle 2 is the what the students already knows that affect the learning yes

definitely their entry behavior that is the past learning.

Suppose if you have now they are in entering into the class 9 means till class 8 grade 8 whatever they have already learned about it that will definitely is going to influence that is where the learning the learning experiences the knowledge backup is very very important the more the that means, the more the students are exposed to different types of knowledge repository resources etcetera that is going to help them in the current learning present learning because these are the resources that are with us in the back in our backup. So, learning consists of either adding to the existing student knowledge known as the conceptual growth or the transforming or revising the student knowledge known as the conceptual change. So, we have already discussed that schema schema is nothing, but our concepts our ideas about certain things. So, if the if the our past learning is actually helping out past learning is which is adding is adding value or it is helping out our existing knowledge practices that is that that means, whatever we are learning now a day now today right at the moment our past learning is helping it out it is actually facilitating this present knowledge. That means, in this direction there is a conceptual growth is taking place I am moving in the same direction, but with more clarity more in depth analysis more thinking analyzing analytical skill etcetera.

So, conceptual growth takes place because whatever they are learning now it has it is being boosted up enhanced by the past learning experiences that is it ends up in it results in conceptual growth or maybe that or maybe that maybe that sometimes whatever the learning is completely different then they have to completely transform it change it revise it ok. So, if whatever they have learned it is now the present learning is completely different task is completely different. So, either they have to transform it change it or revise it and update it knowledge that is called the conceptual change. Conceptual growth that means, it goes it moves on in the same direction with enriching experiences whereas, transforming revising that is revising the knowledge is that it is to bring a transformation or change that is the conceptual change ok. Principle 3 is that students cognitive development and learning are not limited by general stages of development.

So, yes of course, all the students learners are going through some developmental changes, but that is the rule of the nature that is the developmental that the developmental processes in the process or maturation in the process of maturation and growth etcetera some natural development takes place. However, their cognitive development learning are not limited, but are not being restricted, but they can go beyond that developmental stages with different you know maybe that you know do different training different with more extra effort more with more with exposure to more resources resource learning resources. So, it is not bound it is not restricted that he has because you are in this stage your cognitive level development learning cannot be improvised cannot be enhanced. So, that is the students cognitive development learning are not limited by the general stages of development, but rather it can be strengthened enhanced through some other approaches resources even pedagogical strategies.

Then a principle 4 is learning is based on the context. So, generalizing the learning to new context is not spontaneous, but instead needs to be facilitated. So, yes definitely it is a principle learning is based on context because we are learning in a particular context. So, we believe that yes it will be applicable to a similar context or a similarly new context. So, the thing is that it does not get replicated automatically. It is not applicable to this new thing on its own. With the new context is of course, it can be applied, but with the new context there may be   some   variations.

So, it is not just so. This transfer of learning from existing context to the new context or a similar context is not just spontaneous, but rather it needs to be facilitated. That means, it should be customized. It should be promoted. It should be facilitated. Every context may have their unique features. Within a similar context, we can think that yes this principle this solution can be applicable, but additionally, it should also be facilitated promoted with more elaboration with more guidance more clarity etcetera. So, even though we say that this learning is when you talk about the application of knowledge or the learning content. It automatically does not get replicated, but it needs some kind of facilitation, some kind of promotion   some   kind   of   elaboration,   some   kind   of   guidance.

So, I am just stopping it here. In the next class, we will be discussing more principles on learning. Thank you.