

Psychology of Learning

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Lecture – 20

Thinking and Cognition (Contd.)

Hello viewers, welcome back to this NPTEL course on the Psychology of Learning. In the last class, we were discussing problem-based learning and how the problem-based learners should learn and develop different kinds of skills. To continue with that only, let us see, how problem based learning is different from the traditional learning which primarily emphasizes on prescribed learning or you know mugging up and remembering and producing all kinds of thing. How problem based learning is completely different. So, problem based learning is a pedagogical approach of the constructive learning theories.

So, these are the advantages of problem based learning as you can see. In the problem based learning, there is a completely immersive learning completely experiential learning. So, not just experiencing the problem, the whole learning situation, the realities too. And in this context the learner has to develop different kind of skills both social skills, cognitive skills, emotional skills, learning skills all these skills learner has to develop and these are required for solving the problems and reflecting on the solutions, analyzing the things. So, this process is a completely immersive, experiential learning process and in this process we will see what are the advantages or the skills the learner develops.

So, first thing is that he gains a self-directed learning skill. when the learner lands up in the reality or real life situation then by exploring the different facets of the problems he gradually gains a self-direction how to approach the problem how to formulate the strategy. So, gaining the self directed learning skills critical thinking skills. Definitely before planning anything before thinking of any solution etcetera he has to evaluate it critically reflect on it all these things. So, critical-thinking skills also he will develop. He will also develop cooperative learning skills because in the problem based learning more than one learner, a team or a group of learners are present. So, they have to mutually discuss, mutually explore, mutually decide in a cooperative way then, he seeks the solution. So, in this process when the learner works in the cooperative learning context or the group learning context, the cooperative learning skills also develops that which is beyond the cognitive skills of the learning skills and which also include the social skills, emotional skills etcetera.

All these are cooperative learning skills: peer tutoring, peer sharing, sharing the mutual perspectives mutual suggestions etcetera. So, it facilitates the high motivation commitment, and positive attitude towards solution. So, it energizes the learners to be positively engaged in in the learning processes. With the sense of togetherness, high motivation, positive feeling emotions all these things also slowly develop. So, again in this process the learner acquires the communication skills not just for better explaining the things, but also for mutually understanding their emotional mental setup. So, understanding mutually, sharing mutually caring and all these kind of empathetic cooperative skills that also develop higher order thinking skills like you know primarily reflective thinking metacognitive thinking then you

know critical thinking all these critical thinking creative thinking thinking of innovative even problem based learning also involves the creative thinking approach.

So, all these higher order thinking skills develop and automatically it constitutes a model of learning a model of learning from this problem based learning situations. It increases the skills in using the information resources like now in this process the learners they create the information resources knowledge resources which can be used in multiple occasions. So, that that that means, the capability in the skills in using the information for different from captured from the different sources and can be utilized for different purposes. So, and automatically that means, going through all these things coming across all kinds of the situation and evaluating the efficacy of different kinds of solution etcetera it automatically empowers the learner with decision making ability that is not just the planning skills, but decision making ability. So, with experience with problem based learning the learner can come up with decision making ability like for example, in which situations what will be the which approach of what strategy will be appropriate that decision can be taken easily taken by the learner.

So, as you can see the problem based problem has been assigned to and identify what we need to know all the group members team members they will identify they first they discuss the debate they explore all these things then share. So, then learn and apply if it is to solve the problem. So, strategies or solutions they have produced they have created then they are not just applying in the problem particular problematic situation in resolving the problem, but it can be also used for the future research future purpose also. Now, let us see this is the 21st century learning environment we are at the moment we are in the 21st century learning environment and moreover in post COVID we are in the online mode we are in the online platform or moreover we can say we are in the education 5.0 almost 5.0. So, techno advanced techno based environment. So, it is not just problem based learning experience and learning, but it is also online learning environment.

So, what are the new components that 21st century learners they need to develop or what the learning environment offers us. So, the new learning environment of the 21st century actually is it is primarily it is primarily emphasizes on the deep learning approach deep learning approach that is exploring the age that means, developing approach means with enough of online resources open source of resources. And in numerous challenges numerous challenges and emerging novel challenges starting from your you know climate change to energy to all kinds of eco ecological problems to you know carbon footprint all kinds of things.

So, now, we need to explore the you know need based solutions the future based solution. So, so, we need to have the ideas a lot of ideas. So, it is a sparking the ideas because it is the knowledge society present knowledge is the capital. Now, in this 21st century learning and when knowledge is the capital, knowledge is the resource, knowledge is the you know knowledge society the society is knowledge based economy knowledge society. So, that is how we are emphasizing more on the deep learning and knowledge domain how to create knowledge.

So, because you know in the constructive learning approach yes knowledge creation construction of knowledge was the philosophy. But now with the emerging challenges and when we have already landed up in 21st century learning environment post COVID in the technology or technology technologically or technically advanced society. So, knowledge is the capital and we have to perform we have to learn we have to solve the problems in a

knowledge based economy with online platform with techno savvy people. So, here the definitely our pedagogy or andragogy would be little bit different. So, that is that is exploring the age exploring the new challenges or engaging in engaging ourselves in the deep learning.

Now, we are focusing more strategically towards the challenges over world challenges global challenges and challenges which are very threatening to which are threatening to our future and our existence etcetera. So, here the ideas here the ideas sparked n number of ideas are there and technology has actually technology is being used as a tool to for the easy access for the easy exploration for the resources. So, here that means, how fast how deeply we have to we have to be involved in the learning process that is here the new possibility we have to all the time we have to explore here the learning goals are to explore the new possibility. The new exploring the adopting the sustainable approach for protecting and preserving the resources for the future. So, it is a kind of more imagining and 'ah' kind of experiences learning experiences with new possibilities and work with with and working together again more of the working together collaborative learning cooperative learning.

So, not mutually against to each other, but mutually with agreeing with the with the learner. So, working together group learning collaborative learning virtual learning and how quickly we can adopt ourselves to the change. That means, change oriented learning like we are that means, we are you know pro change learning process because here our focus is for the future the how to secure our future how to you know how to innovate the sustainable you know sustainable tool sustainable technology sustainable learning materials for the future to conserve to preserve our future. So, here we are focusing more on deep learning exploring the exploring the mechanisms now in the era of in this present age of AI and machine learning and data science all these things. So, technologies there technology has been advanced like anything.

So, technology and with the that means, keeping in pace with the technology like we have to think of the solution in that way. So, in the in education 5.0 here in the new learning environment we have we are more engaged for the conservation and preservation of the future. So, that we should not face these old problems is the challenges how to secure a future with the new challenges with a solution for the new challenges. This is the approach group approach virtual learning collaborative learning change oriented learning that means, being adaptable to change and imagining for the possible solution for the futures.

So, all these are the ideas idea creation idea generation. So, because now we are living in a knowledge society. So, our some as because knowledge has become a capital and industry 4.0 is very active that is the academy industry collaboration is there. And we have already with the new education policy we have on technological advance resources technological advance tools learning tools.

So, learning knowledge has not just become an industry and capital, but our education is also has become an industry with the with the technologically advanced enhanced learning processes. So, how we have to think differently we have to we have to change our adaptability we have to be very innovative. So, it has completely changed the perspective of education. So, now, as you can say the suppose this is the new these are the new learning models new learning models is that where the work is in progress and it is made public it is now it is everything is open source. So, social networking learning resources are open is open for everybody there is no things the learning as an enculturation into a practice that means, whatever we are learning now we are enculturating as a part of our practice.

So, the learning is that means, we are learning means you are using whatever knowledge is being created we are practicing it using it that means, it is the learning as the enculturation into a practice whatever learning whatever things we are learning we are embedding it in our practice. So, so that is the learning as an enculturation into a practice where the where work is work in progress is made public whatever advancement whatever progress that we are making that is that is all explicit it is all being demonstrated it is all being given in the open platform. So, the suppose the that means, the suppose the learning new learning model is the architecture of the story here a powerful social learning environment. So, here social emotional learning takes place everything is explicit everything is open everything is in and with the immense source of knowledge information etcetera how can we think strategically, how can we think deeply and come up with the new ideas new solution to the existing challenges and to secure the future and as soon as it is as soon as we come out to with the with the solution it is all it is all it is open to everybody it is the easily available to everybody it is it is made it is quickly made it is being made the public ok. So, it is the kind of we have to develop a culture of learning that is learning as the process of enculturation of new ideas into practice.

So, and this is also again technology enhanced collaborative learning is the technology enabled active learning that is technologies are there. It is a potential tool is empowering tool to help us out and the open source of information and knowledge. So, technology enabled active learning here all the learners are actively engaged in deep learning process and technology has enabled us ok. And, but at the same time it is problem based learning at the same time it is collaborative learning at the same time is collaborative learning and it is not just for mutual benefits or for the benefit of one country another country, but it is a global benefit is for the global societies for the global global sustainability is for the global proper outcome global benefit global global well being. So, in this platform kind of thing technology has made it easier that means, easier to embed to blend all the lectures experiments and discussions and tutorials and you know very different kinds of videos resources are plenty just we need to assemble it with integrate it properly as per our requirement. And, so that is a technology has enabled has enhanced all these thing in a in the right direction and it has empowered us by giving us access to and providing us with a number of you know examples and number of resources and number of activities etcetera.

So, in these things now with the with the launching of the online learning or open source of information etcetera definitely. So, it is another way of empowering everybody to learn. So, learning has become a culture because a part of the culture because now there will be it is expected that all the learners all the individuals will be will be all the individuals will be one way or other way they are learning together the mass learning can take place. So, there is no question of or address question of or maybe there whatever it is there addressing the dropout how to reduce the dropout. So, it is you know learning together living together learning together and making each other making each other a part of this knowledge society that means, empowering everybody you know informing and sharing the information.

So, enabling and developing skills and competencies for everybody that that active technology enhance active learning environment has given us. Now, the thing is that for example, here again learning to be here the primary motto of learning is learning to be. So, for our basic for our basic existence itself we need to learn learning to be sooner than later that means, here our existence is being is to be determined for learning. You know we can we are not just living and unlike earlier our existence is for you know bread and earning the livelihood or the bread and butter or doing something else you know learning to be that means, we are

here for creating the knowledge for being engaged in the in the learning process for developing the culture of learning. So, learning to be sooner or later sooner than the later as soon as as you can see learning about now till now suppose learning about different domains different concepts different subjects different works etcetera.

So, whichever it is available learning about the content is already explicit it is there ok. So, it is already explicit it is already available easily available ok. So, what about which is unknown learning to me means we need to explore these these many this is this domain that is which is tacit which is implicit in nature which is not yet not yet uncovered which is not yet discovered which is not yet open up which is still in that tacit form implicit form unknown form. So, learning to be when we are here for our existence is for learning then we can explore all it is such a larger domain left out with us with the tacit knowledge know how approach implicit knowledge or the knowledge that we gather from the from the experiences experiential learning all these. So, so, tacit knowledge and learning to be is the motto and tacit learning how to explore the tacit learning capture it use it that is the domain that is the major objective of learning this present generation of learning.

Because it is we are living in the knowledge society knowledge capital is a major source of information and source of information and again with the global with the global in globalization and the global learners global you know knowledge knowledge hub. So, and there are different dimensions of knowledge. So, how the tacit knowledge would be explored how can it be cultured it can be enhanced it can be utilized it can be made explicit it can be you know it can be captured and made explicit can be and it how to create that knowledge as the power. That means, again it is a knowledge capital again is the copyright is again it is the patent. So, learning to be now the present generation in the present age it is learning to be that means, learning is the source is the primary goal of our existence and we need to deal with the tacit knowledge that knowledge exploration.

And we are living in the education 5.0 because being technology enabled technology enhanced learning environment. So, learning to be that means, in an epistemic frame. So, here we are learning to be means which would be in an epistemic frame because knowledge framework epistemic framework. So, enculturation into the practice here the primary thing of primary goal of learning is to enculture the enculturation whatever we are learning it has to be practiced through enculturation into the field of a field.

And legitimate peripheral participation legitimate peripheral participation is a global is a global participation everybody is equally that means, learning together everybody is equally is equally getting the access and resources knowing there is there is a minimizing the gap between the haves and have nots. So, that is so, how to get that legitimate peripheral participation that is called the apprenticeship. So, here in the cognition also that is called that is called the cognitive apprenticeship that how to develop that kind of skills and competencies cognitive apprenticeship is also concept like we have used that means, metacognitions in cognitive apprenticeship scaffolding all these are the latest pedagogical approach way of seeing way of knowing sensing that sensing what constitute an interesting problem. Like for example, here also we are supposed to discover the problem not just solve the problem we have to identify and discover it could be the possible problem it could be potential problem seeking what constitute an interesting problem knowing what constitute an elegant solution to that problem being able to engage in productive enquiry productive enquiry ok. So, these are the methodology nowadays epistemic framework that is a cognitive apprenticeships that is the way of seeing in a different way way of knowing something different that means, how to

identify how to explore how to discover interesting problem how to get how to constitute a effective solution for elegant solution for that problem how to be engaged in a productive enquiry enquiry which is productive.

Productive enquiry is that aspect of any activity learning activity where we we are deliberately seeking what we need. So, though not always, but consciously and deliberately we are seeking what we need in order to do what we want to do that is leveraging the net leveraging the internet leveraging the resources how to leverage technology how to leverage this open source of learning. So, we have to discover we have to identify potential problem then we have to seek the elegant solution then we have to practice it and make it embedded in a in a culture that is the enculturation of this practice new practices innovative practices then to make it open access to everybody open access to everybody and then again giving the cognitive apprenticeships apprenticeships the training to everybody every learner how to how to see the thing way of seeing way of knowing way of exploring way of identifying the problem all these know hows know hows and know on knowing the different ways and strategy and productive enquiry productive in enquiry also as the active leisure when we are even in the leisure also we are active and we are enquiring about something which is productive which is positive and constructive. So, productive enquiry active leisure then apprenticeships apprenticeships cognitive apprenticeship training scaffolding and enculturing the learning into the practices identifying the future problems and identifying the future problems etcetera. So, these are the new things of the present current educational scenario or the knowledge society.

So, similar the emerging vernacular of the digital age how it can helps helps us in reach immersive media is there how to develop the new skills new type of technological skills like navigation skill web designing skill then cognitive then linguistic skills that means, journalism then journaling skill language of interactivity and then all coding skill then new type writing skills all kinds of critical thinking skills these are these new emerging skills are we are also we are supposed to learn for the future for the for the future for the future days to come in that for the future generations of learning and knowledge society.

So, in this way now this is the in this chapter this is the last one the concept mapping is concept mapping is not a new one it is already there, but concept mapping when we say that is primarily with when we are dealing with the human thinking process concept mapping. So, whenever we learn it is again it is a mechanism is a tool is a way of in a heuristic way of learning everything and remembering everything. So, it is a concept mapping it also in terms of mind mapping concept mapping are all can also be done in the in the computational computational learning also concept mapping is that is the is the kind of money that means, summarizing the whole thing representation actually it is a mental representation a mental representation of the whole lesson in a particular picture in a one page summary in a one page diagram. So, there is a structure it is a that means, you know it is a structure it is a diagram which represents the semantic relationship among the different concepts.

So, it is a technique to constructing the whole thing whole there is a themes all the summary or the essence of this chapters into a one picture mental image through the concept mapping different. So, here different nodes different points and if one nodes will be there and they will be linked in. So, they are linked in to represent their relationship. So, in the like the like the computational you know mind mapping or the pictures etcetera. So, nodes arrows linking lines are there linking the different phases.

So, it shows the kind of relationship between the different nodes. So, primarily so, the two

nodes when they are connected they are called a proposition when the two nodes they are connected this is called the proposition. So, mental maps are versatile graphic organization. So, it is a graphic organizer that means, it is a graphic representation of the knowledge for enhancing our memory for you know for giving the holistic approach holistic perspective or for perspective or summarizing the whole of the whole theories or the lesson some of the lessons into one picture. And usually we need to do it need to do it as a as a mnemonic mechanism or you can say as an advance organizer or mental representation of what we have learnt.

So, concept maps are versatile graphic organization, but this it can be done in diverse ways different ways different formats are there. So, versatile graph it can be used as a versatile graphic organizer so that means, this graphic representations can be made in different ways different with different types of nodes linking etcetera different images. So, which can represent many different forms of relationship between the concepts. So, whenever we are learning and formulating our different new concepts new components how could we remember by relating all these things integrating all these concepts. So, it is it represents that a graphic organizer of or you can say mental representation a graphic organization organizer of the different concepts that we have learned.

So, now, this is the next thing is that it is the for example, this is the this is the regular basic structure of the concept mapping like in the computer language we can say concept map is that these are the forms of it is a concept map means these are this is the form of nodes nodes link diagram all how many nodes are there how these nodes are being linked what is the diagram it has developed and what kind of relationship with the page. So, nodes are there it consists of different nodes nodes are then directional links are there then nodes represent the concepts nodes are means different concepts and how these are linked to other things. So, linking labels are there it describes the semantic relationship between two when two nodes are connected means it describes the type of relationship between these two concepts. So, its background is that actually theoretically a theoretical framework is that this that is a this concept mapping is actually is based on the David Ausubel's assimilation theory because he has propagated assimilation theory meaningful learning. So, where meaningful learn theory of meaningful learning where Ausubel has advocated that this concept mapping can be used as an advance organizer.

Advance organizer in the sense that before actually starting starting to starting any lesson starting any lesson or starting any instructions or giving instruction about a lesson then we can use this concept mapping framework as an advance organizer to orient them towards the lesson towards the main theme. So, it can be used as a advance organizer. So, advance organizers are actually it facilitates the things. So, advance organization is a type of graphic organization it organize and represents the whole set of knowledge of the subject and it begins with main idea maybe that suppose in the central it is the main idea it may it means the main idea begin with the main idea in the central then be then it can the ideas can be broken down into different branches as per the importance as per the specific topics as per the branches as per the functions as per the operations. So, concept mapping actually it is a powerful way of for the students to reach high level of cognitive performance.

Suppose after summarizing everything learning everything when we summarize the whole thing into a concept map that means, all these concepts all these nodes when we write it down and link it to its functions and operation branches and all other aspects then we actually we revise all the relationship we revise the revise the whole learning processes revise all our

information processing the processing and learning processes all together again. And we try to remember this whole thing this image itself can be stored in our long term memory to in a very strategic way you can say to not just to enhance the cognitive performance, but to retain it for longer period of time in learning in long term memory. So, it is a similarly so, it can also not it is not just a learning tool it can also be an ideal evaluation tool for the educators because for measuring the growth of assessing the learning a students learning it can be used for the evaluation purposes also. And you know the concept maps as the reiterate the ideas repeat the ideas giving the its importance function etcetera. So, it directly that will help to identify the incorrect ideas also suppose when we try to prepare this advance organizer concept map as an organizer again we can also find out which concepts are you know incorrectly used which in ideas are incorrect incorrect answers incorrectly proposed incorrectly placed.

So, it can also help us in to rectify those incorrect ideas also. So, benefits of concept mapping is that concept mapping serves as a several purposes it serves several purposes for the learners as per the instruction is you know it is acts as a advance organizer it helping the students in brainstorming and generating the new ideas after drawing everything then we think of the other solutions multiple options also discover the new concepts how to connect them and how to communicate the ideas thoughts information etcetera. So, memorize actually primarily to memorize it remember it process it thoroughly in the working memory in the thoroughly to you know to process it thoroughly in the working memory. So, that we can it can be retained for a longer period in the long term memory. So, integrate the new concept with the older concept then to for again for enhancing our knowledge gaining the enhanced knowledge for any topic and how can now we evaluate our own knowledge and information again how can we extend it expand it elaborate it to with the new diamonds new concepts this can also be done for the further enhance learning.

So, how to build a concept map let us start with the main idea or topic or this is suppose this is the main idea for example, as you can see this is the main idea. So, begin with the start with the main ideas and now here another thing is that we are using different colors different colors for different kinds of relationships different points these are the nodes like these are the nodes. So, focus on the questions something what needs to be done then how you can also done we can also design it in the hierarchical structure what are the main concept then the sub components then the as per the priority as per the hierarchy as per the difficulty level also we can also draw it. So, and we can use the multiple colors for you know this is for the strategies using for the thinking this is for the test this is for the writing part this is for the memory this is for the you know this is for reading aspects. So, here the five key concept that connect and relate your main ideas and write them then.

So, to determine what are the key concepts what are the determine then it helps us in the what are the key concepts in the main idea what are the key concept functions operation features then applications in this way we can find out the key concepts. So, finishing by connecting the each concepts link creating the linking by the phrases the words the concepts are created cross links then which concepts are in the different areas what sort of relationship they are they are we can also from time to time revise it and revise it we can change the we can add something new we can expand it we can elaborate it. So, we can also modify it from time to time we can make the revision several divisions. So, it is a kind of like you know it is a kind it is a learning process effective learning process to that means, make it more strategic because you know strategy when it is like when we are developing different concept in the schema. So, that means, we are compressing multiple ideas into one component.

So, it is a skillful it is a skillful it is a very strategic comprehension or developing the schema. So, which can be better remembered for the and better better stored in the long term memory. So, these are also like these are there are different you know flow charts of different flow charts different ways that you can prepare the concept mapping like how these here like for example, how these 6 topics can be integrated in one concept map mapping picture with the things and from that and from how each topic can be related or to also sub topics like this and it is a kind of like this like the communication network it has a concept mapping as a spider like it is called as spider concept map flowcharts the kind of flowcharts also like it is you know you know hierarchy of the concept in terms of channels in terms of channels there will be in terms of verticals horizontal in terms of branching in terms of noding all kinds of. So, this primarily we use this kind of network in communications in this type of network in computer you know computer computer processing information processing. So, it is a flow chart of the concept like from the from the important higher level to the then the lower level and the from the that means, from the top level top bottom approach or from bottom up approach or from the horizontal approach or from hierarchical inductive approach or the circular approach or these are the different designs different designs of the concept mapping and depending on the topic depending on the theme we can we can adopt any of the any of the concept map format.

So, similarly it is a circular way it is a rectangular it depends on the subject. Similarly, the multi dimensional three dimensional concept mapping is also possible is the flow of state of information or the sources being displayed being given displayed and making it easier for the for make understanding the complicated complicated things instead of two dimensional now this three dimensional concept mapping can also be done. So, concept maps as the advance organizer advance organizer is like you know you can say primer it acts as a primer before actual delivery of the lesson. So, it is a kind of basic information introductory primer it acts as a primer for that is advancing the actual learning. So, advance organization that means, fostering the meaningful learning in order to learn the lesson more meaningfully if you will be introduced with some advance organizer some primer then students cognitive structure reframing schema of this reframing of the schema construction of the schemas cognitive architecture. So, all these things will be strengthened providing the that means, giving them a background a context by providing this advance organizer we can facilitate the students in incorporating progressively differentiated details differentiated or complex ideas. So, it advance or as a advance organizer also it forced the integrative reconciliation like whenever more difficulty or more complex ideas are coming up how we are adding it how we are integrating it. So, that mapping that integration integrative reconciliation or the how to integrate it with its subdomains of knowledge functions branches all these things. So, we can easily we can easily memorize it we can easily understand and keep it in the memory. Otherwise if we suppose in the instead of linguistic way narrative way etcetera if you go on and go on.

So, we cannot remember maybe the all the things, but if you can visually visually you can represent it this concept map and elaborate it then we can exactly remember what are the components what are the details are there. So, concept mapping is a you know actually is a is a strategic learning strategy and can be used in advance organizer for the deep learning for the better understanding. So, cognitive maps and similarly on the basis of concept mapping we can also develop the cognitive maps. Cognitive maps means developing the cognitive structures. So, so that is this is a this is again to support the simulative learning like when we go where we develop new cognitive concepts in a and restructure and we structure our own cognition we are by adding the new components new domains new concepts this kind of concept mapping helps us.

So, assimilative means, when we try to assimilate something with the existing concept, it means we are not completely revising it changing it, but we are adding new concept to our existing cognitive structure. So, integrating new information, adding new information to the existing knowledge that is the cognitive structures without revision or without modification. It is not revision. Because, same structure is there, but we are adding new concepts to it. So, it is a concept mental image mental representation for memory enhancing and building the elaborately basic structure as well as the simulative integration of the new information. So, whenever we are designing, creating this concept map, not only we are remembering the existing schemas and concepts, but we are also extending and assimilating more schemas in the cognitive structure.

And in this way it can also enhance our cognitive maps. That means, when we are framing the cognitive structures, we can also develop the cognitive map by practicing this concept mapping. Because when we are developing and drawing the concept maps, simultaneously we are also remembering or replicating the same thing in our cognitive structure that is through cognitive maps.

So, these are some of the softwares that are already available. You can go through this. So, how from one idea, we are assimilating many new concepts. So, this is the cognitive structure, cognitive map. In our mind, we are already having one or two concept schemas. Now, here we are adding more concepts. We are not changing it. We are adding more. So, developing the cognitive map. This shows how concept mapping can facilitate in developing our cognitive maps also. So, this is all about thinking and cognition. Now I am closing it right now. So, I hope you can understand it. A lot of resources are given here. I am also giving you some of the links. You can go through them and better clarify concepts.

Thank you very much. In the next week we will discuss another topic related to the psychology of learning. Thank you very much.