Psychology of Learning

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Lecture – 45

Psychology of E-Learning (Contd.)

Hello viewers, welcome back to this NPTEL course on Psychology of Learning. In the last class we were discussing about adult learning in the e-learning platform. Now, to continue with that let us discuss about some other aspects. Now, this is the Knowles' model of e-learning adult e-learning models that means, what are the characteristics of adult learners and the Andragogy model. And these are the assumptions five assumptions that Knowles has made it like before that in characteristics of the learners adult learners should be taken into account before designing any courses for them.

So, how their self concept is must be taken into account the adult learning learners experience should also be taken into account. They must be prepared they must be ready for ready to learn. So, then so that is why they can link it to the professional experience, real life experiences. Then how the orientation of the learning should be given to them in the training program, in the learning e-learning programs and the motivation or to learn what are the basic motivation they intend to learn through the training program all these five assumptions should be taken into account for designing the learning models e-learning models for the adult learners.

So, these are the four principles involve adult learners in the planning and evaluation of the instruction itself: problem centered the adult learning is very much problem centered rather than content oriented. So, they always look for the because as because they have already they are already having the experiences they always look for the new strategies or the skills that they are learning in the new model how through their focus is primarily probably mostly how to solve the real life problems the challenges they are facing in the work place or in the real life. So, they always look for mitigating or solving the problems. So, their approach should be approach of the training or learning should be more problem centered. So, and again their relevance and its how it how the learning this e-learning is experiences and the things are how it these are relevant and it has a positive impact on the their lives on their profession and the career.

So, they will always look for searching for some kind of solution some of some kind of the strategies that will help them in enhancing the ability to resolve the issues conflict challenges in their life. And adult learning experiences that experiences it includes that provides this that includes the you know their past learning experiences the mistakes the you know the any kind of difficulty any kind of challenges any kind of issues they have faced. So, this is that these are the. So, these are the four principles on which we can design the learning material e-learning design content and design for the adult learners. So, here the they are not interested for learning the new content basic content for the knowledge sake rather for the solution for getting the solutions developing the skills and getting the strategies for resolving the day to day problems they are facing in the work place or in real life.

So, now the principles for designing the now let us see the principles of designing the e-learning to engage the employees. Like the learners students engagement similarly in the work place employees engagement is also very important. So, how to design the content e-learning courses. So, that training program. So, that we can engage the employees.

So, first thing is that make sure that the learning is relevant to the learner again similarly same thing the learner can relate to can link to link to the content he or she feels that no it is going to help me in my profession in my career in my work place. So, we have to ensure their engagements once they are relate they can relate to they can find out that it is meaningful and relevant for my profession or my career then they can they will be engaged they will be more attentive they will be more engaged. So, ensure through these through these we have to ensure the engagement and learning must be very relevant to them to the learner that is to the employees in terms of their skills professional skills work place things etcetera. And so designing the content and activities that are directly related to the job roles to the job roles roles job goals or the challenges they are facing in the work place. So, and we have to again at the same time we have to make it very intrinsic in the sense that the learner within himself within himself the learner every employee must feel that no I need to learn these things learn these things for my professional career.

So, they have they in in this way they must have some innate desire to learn the learn the content or the to go through the training program for the learning sake. So, now the to drive the people drive the employees and working professional etcetera to seek out the new knowledge and skills then there must be some kind of external reward some incentive must be there in the work place either it is related to their promotions or it is related to their career advancement scheme or any incentive or any kind of you know leadership position or kind of pay hike or the any kind of extra allowance all these things some external incentives should also be attached to it. So, make the make the learning more intrinsically motivating and the content must be interesting engaging and they can explore further and it is more related to discovery learning they can discover new discover new new future challenges probable or futuristic challenges what can be what or a new future emerging challenges may be there they can explore discover and also prepare themselves by learning the skills and strategies to empower themselves to. So, that they are confident enough to mitigate those challenges in future. So, that means, they feel like they are very autonomous independent and they have the complete control of control over that over their professional job experiences.

So, keep it satisfying like the learning experiences must be satisfying the progress over progress over time their progress should also be substantial some must be opportunities must be given to them to give the feedback their opinion their comments etcetera activities are these are relatively challenging not too difficult, but relatively challenging and also gives a kind of sense of achievements sense of new learning skills etcetera that is that sort of things would be included make it more social to interact with others. So, mostly they also come to such kind of training program for developing their professional networks. So, networks so, that social interactions would also be thing and opportunities for the learners to collaborate with their different possible projects that is that kind of that kind of possibilities should also be there. So, then however, it has to be made more personalized as the learner must feel that the content is tailored to the specific needs of needs and interest of their profession or the and it also uses the adaptive learning technology to you know to ease out the whole process of learning and learners individual needs are addressed and again yes of course, to engage them in the social engage them in the social platform all kinds of discussion forum social media platforms all

kinds are being are going to be used extensively varieties of content options then personalized recommendation by using different kinds of AI tools games gamification simulations all these things simulations these are some of the things that can be included integrated in the employee engagement employee e learning modules. So, now, cognitive psychology in e learning are also being taken into account like it present the knowledge in a format of human mind how ultimately they are the human being the even though they are the e learners, but   they   are   the   human   being.

 So, how quickly they can understand how longer they can retain it how skilfully they can use it. So, the basic here when designing the thing basic units of knowledge how do we instruct a design. So, course design. So, basic units of knowledge in terms of concepts prototypes and schemas are to be referred while developing the content. So, the concepts these concepts are actually   categories   of   knowledge.

 So, concepts concepts like you know all of us we have already gone through the concepts like which are the concrete objects concrete concepts are there and abstract concepts are there like abstract which is you know which is a kind of little bit ambiguous like feeling happy feeling joy or or any kind of like feeling patriotism patriotic all these kind of things are. So, concept can be categorized as concrete and abstract concepts prototypes and prototypes are the most recognizable examples of the things. So, how to introduce different concepts prototypes and the schemas in between the in between the learning e learning designs e learning e learning training programs that is also that is also very important. So, now of course, a simulation accommodation these are the basic human processing abilities mechanism that we incorporate and information processing abilities also to two key principles of information processing is that that that whenever we collect the data that we gather from our surroundings constantly by multiple different systems multisensory organs etcetera. Now we have to very mindful   of   how   we   present   the   information.

 So, how we present the. So, there are different modes audio mode visual modes and sequential mode different kinds of the how we are how we are going to present the information in such a way that it becomes more motivating attractive etcetera. So, how we organize the concepts concepts case schemas and the prototypes in sequential way. So, that it can be very very attentive it can be very attractive it can be very mind catching eye catching and. So, it can be very.

  So, we have to use it mindfully. So, format of the learning format of the learning that is of course, depends on the be the classroom of a computer based or etcetera impacts on the data collection as well. That means, for whenever we that means, we design the course and offer it to the learners etcetera later after the completion of that then again we have to collect the data learns data and analyze it. So, we have to from time to time we have to many ask many questions and how to make the mode of presentation more effective. Suppose for the first time we have we have offered a course e-learning module for the professionals then after the session after the course is over now we will collect the data their feedback their results their performance the discussion for everything to analyze the whole thing like how it is going to what are the drawbacks or maybe there what are the new components can be added accordingly we   can   modify   revise   the   next   time.

 So, are there are the are there the instruction and the best practices we need to send to the instructor along with the training module. That means, every time the instructor the coordinator reflects on that he can get the answer to some of the new additions new revisions

new concepts. So, all these things also these are the so these are the from reflective questions that the instructor need to ask themselves. So, knowing the processing limits like yes of course, even though they are the adult learners, but all the every human being they have we have the limited capacity of holding the information in our short term memory for a time being be it visual information or the auditory information or you know whatever. So, we have to we have to be very resilient about the focus on the learning focus on the learnings timing how much information at a stretch should be given to them how much visual information how much auditory information and at the same time we must give them the opportunity to opportunity for giving some examples some assignments some task for the for self discoveries or self discoveries should not be loaded the contents should not be loaded with all the prescriptive kind of content, but there should be some kind of questions and queries some assignments project.

So, that the learner the adult learners the employees they will discover they will start self discovery. So, self discovery so, the here the learners are forced to discover some aspects of the syllabus for themselves or maybe to some new skills or thinking about the new challenges critical challenges they are facing in the work place. So, now presenting the core concept the high level again inductive presenting the core concept of a lesson in the form the high level theories of the learning point supplementary content resources would also be given and given and the learning sometimes you know learning that means, behavioral approaches would also be adopted from time to time learn more from each of each other mutual learning sharing the thing and how to enforce the interactivity even in among the online online among even the online programs also through chat box chat group participation projects among the among the adult professionals because mostly the adult professionals are the working professionals. So, they are already experienced they have the immense experience and all kinds of you know they are also autonomous they are independent. So, they do not then they cannot be easily diverted to any such activity which they feel or they will think that now this is not relevant for me.

So, to draw their attention towards the learning towards the interactivity towards the discussion forum etcetera is also biggest it is a very biggest problem. So, how to draw their attention even for the social interaction and discussion forum that is also a challenge. So, how to engage them to in the group discussion chat group participation that is also another questions another objective of the learning designers. So, for that matter so, multiple play playing games multiple multiplayer of the games function simulations role playing fostering the interactive through some projects some activities some new ideas brainstorming activities primarily simulations and gamification all these are different opportunities where you have to create that this kind of events and opportunity to engage them. So, making the cognitive learning.

So, here they become more curious more involved more engaged when the cognitive challenges are there some cognitive challenges are there. So, they become very interactive very inquisitive very energetic. So, learners to sequence the learning content and so, in a cognitive for cognitive learning provide the main content in the bullet points that we have already occur already discussed videos and audio files etcetera cognitivism always cognitivism always focus on the e learning content developers must do everything possible to challenge the learners minds to the fullest. So, how to how to induce their creativity how to create how to ignite their creative thought how to engage in brainstorming processes how to you know how to give them the stimulation how to stimulate them encourage them ignite their minds for you know new challenges new opportunities and self discovery and some creative thoughts

and ideas. So, that is that is the biggest challenge that is that is the biggest challenge in the creative in the in case of the adult learners adult learner it not just about the engagement, but how to activate their curiosity how to activate their higher order thinking process how to activate their critical thinking process how to activate their you know their collective consciousness collective conscience are you know think for the larger audience and the utility for the larger community.

So, these kind of not just self discovery, but also to prompt them to encourage them for more creative and socially useful ideas and that is having the utilitarian approach. So, these are the or how may be that what could be the possible emerging challenges in future. So, these kind of thing how to engage them because they are so exhausted in the routine walks in the professional life and work places that they are. So, they are that. So, they need some not just need some time some relaxation some, but at the same time opportunity to to stimulate their mental or cognitive power or mental effort or the you know we can say the cognitive resilience effort and the creativity and innovative innovations.

So, that is why. So, that is why we have to design it in a very intelligent way. So, intelligent way in the sense that intelligent learning system make it relevant in today's learning e learning environment as well as for the future. So, similarly and instructional design model you know all of us we know already know about the steps different steps of addie model. ADDIE model first is that analysis of all thing for whom we are actually we are designing. So, analysis drives the design and development like for example, for whom we are analysis and we have to do all kinds of analysis.

The learners need analysis to task analysis to cost effective analysis to time analysis all kinds of analysis as you can see. Then in the second phase second is that then after the analysis phase then we have to design it design then the actually develop the course materials and all the course materials lecture tutorials technological tools and resource persons everything we have to develop it or get it ready then implement it then execute the whole thing in the actual situation. Then after the completion of the training program then again we have to evaluate it evaluate its efficacy its efficiency its impact and whether it has met the expected results or the expected learning outcomes. So, similarly other models are there like Merrill's principles of instruction that is a Merrill has also some instructional design model is there like there are the you know there are the 5 steps of 5 steps one is task centre related things learning is promoted when the learners acquire the concepts and principles in the context of real life task. That means, again it has to be relevant if they are professional or the work life students.

Second is the activation learning is promoted when learners activate the relevant previous knowledge previous knowledge. So, here activity principles task oriented principle activation principle demonstration principle how to be demonstrated demonstration principle then application principle demonstration principle its a the learning is promoted when the learners observe and demonstrate the skills to be learned ok. It has to be showed them some kind of simulation some kind of videos or some kind of demonstration of the actual skills these things. So, demonstration after demonstration then the learner will apply it apply it in the. So, application stage application that learning is promoted when the learners apply this newly acquired knowledge in the actual situations in the relevant situation.

Then integration principle integration principle is promoted when the learners integrate their new skills into their everyday life make it a part of their routines their habits their work culture their practice etcetera. So, here they then only they will be able to relate to the problems and

the task that is that they are facing it right now and how to deal with it how to deal with the new skills that they have acquired. So, the course must be must activate the existing knowledge base of the learner and help us in connecting to the previous knowledge and with the help of the new one. So, to establish the link between the previous knowledge with the existing new knowledge and with the and by integrating all these things they can resolve the all the real life situation and so, real life problems. So, now another similarly Gagne's 9 events are also there it is the it he has also given the framework for framework of learning with the with the it is primarily based on the behavioristic approach behavioristic approach and the steps the it is a very systematic instructional design model it is a very flexible model when the to cater to the different learning events and situation, but it is very progressive having   the   different   steps.

  Now, let us see what are the 9 states that is that gain the attention of the students primarily these this model is being used for the adult learners. Gain the attention of the students through many thought for working questions challenges novel ideas etcetera. Thereafter next inform the students and inform the students regarding the objectives that is established with established expected learning outcome etcetera stimulate the recall of the prior learning with leveraging the existing knowledge and then fourth step is present the content like we have to deliver the content in a very easily consumable chunks groupings and very lucid way then the provide the learner the guidance about the instructional about the relevant content and it is and it is relevant skills etcetera with by giving different examples various instructional support supplementary learning material etcetera then to elicit then to elicit the performance that means, engaging them with the different activities. So, that they can recall utilize and evaluate the knowledge and actually perform it. So, the next is that is providing the feedback, feedback the reinforcing the knowledge feedback you know through informative way in the remedial way corrective way etcetera assessment of their performance testing and evaluating it then enhancing the retention and transfer of knowledge to the next job. Then so, how to use this content   for   retention   and   transfer   of   knowledge.

  Now already we have already known about the Benjamin Bloom's taxonomy Bloom's taxonomy in a initially it was the Bloom has initially 1956 developed the taxonomy of learning objectives and later on it is it has been modified revised by the other groups other researchers like Anderson and Krathwohl in the that is known as the revised taxonomy. Now as as you can see the graphics are here like for example, this is the old old pyramid old old structure old taxonomy the steps are like this knowledge, comprehension, application, analysis, synthesis and evaluation, but later on as it was criticized that the synthesis of which mean was the high level of creativity and higher order thinking skill then again it was revised by the followers and this is the revision revised version that is remembering understanding applying analyzing evaluating and then creating. So, this is the revised model of Bloom's taxonomy which can be extensively used for designing any classroom instruction. So, later on it has also added this taxonomy of learning objectives if it is for the emotions emotional learning and for the psychomotor learning also. So, this learning objectives that engage the learners with the content in integrating the new knowledge and the concepts and how it can promote the higher order   thinking   skills.

  So, for in online delivery the quick characteristics is online delivery in as we can see online delivery the content should be accessible, should be user friendly, should be available 24×7 and the learner can go through it according to his own pace and convenience. Multimedia content by using the varieties of multimedia content audio clips

etcetera gamification interactive simulation animation etcetera that we can increase enhance the engagement and understanding better understanding of the learner.

Interactivity is also another feature interactive features in quizzes discussion assessment receiving the feedback answering the questions queries in the discussion forum. So, self based learning is the basic characteristics flexibility in terms of time location accessibility easily access get the access to the wide range of not just individuals, but accessible and it also it is also accessible and inclusive for all categories of the learners different categories of learners be the slow learners, disabled all kinds of the learners. So, remote learning it is possible learning assuring the quality education quality learning materials and free access and 24 into 7 present learning materials even from the remote areas from different locations having different backgrounds etcetera.

Then e-learning courses are also we can divide we can also break it into like we can design the full courses of 3 months 2 months we can also organize online courses, webinars, workshops, virtual workshops, interactive system. We can also design some micro learning courses with short span of time within the short span of time with limited modules and blended learning can also be combination of it can also be used both a combination of traditional face to face personalized instruction and e-learning components we can also use it. So, e-learning content can be can be developed in any in any in any within any combination in a very dynamic way. Nowadays with the massive open online courses which are you know online courses, but having incorporating all the flexibility all the dynamic features of that. So, now, it has been very popular and if for the mass learning for the mass education and for the higher education and the quality education and for developing for building an inclusive society in terms inclusive educational society, inclusive education educational platform and community higher educational adult learning communities.

So, now, this MOOCs have been very popular and in Indian set up also we have been extensively using our own NPTEL MOOCs or the Ministry of Education MOOCs besides that we are also getting access to other international other courses. And some platforms are exclusively online platforms are exclusive focusing on creating the more on this kind of MOOC online courses. So, which can be used as a in the as a part of the formal education, professional development, corporate training, lifelong learning, having the you know adding by adding some credit system, some acknowledgement, some certification etcetera. So, these are the things to popularize not just the e-learning, but also to to spread to disseminate the knowledge, the quality education etcetera in a very enormous way to not just to not just to educate the society and the community and the learners, but also get the maximum benefit out of which out of the out of this inclusiveness, out of this equal access to quality education. Now the key psychological principles factors that we already know that cognitive load theory has to be taken care of, behaviouristic models would be taken care of, multimedia learning the theoretical theories and the principles of multiple multimedia learning is also going to be useful which is very popular by the has been prepared by the Richard Mayer the principles of multimedia learning.

Self-directed learning is also a part of it because it primarily there slowly the learner develops the autonomy and self-regulation of the learner and how the learner can set the different types of the goals for himself career goals, academy goals. So, it and monitor the progress and transfer the learning outcomes. Social learning is also features because you know discussion forum, group project, social interaction, gamification is a very regular features, feedback assessment is also very important constructive feature of this online MOOC courses,

immediate feedback, informative feedback and formative and assessment quizzes. And also now we are by using the technology we are also we are also creating, innovating new formats of assessing the measure assessing and measuring the human potential, skills, attention span all kinds of things we are extensively creating and using it flexibly. So, and learning styles and preferences according for the preferred learning styles styles and preferences of the learners the visual content are designed, textual explanation are given, auditory narrations are also given with the right combination how to and to draw their attention and focus on the learning.

And how can they quickly retain how can they retain maximally and retrieve quickly with the spacing effect with retrieval practices with the quiz with the reinforcement that in terms of feedback incentives etcetera. So, these things features are also being slowly added. Both the motivation intrinsic and extrinsic motivations are a part of it emotional design because here first thing is that how creating a positive supportive learning environment that can increase the learner just learner engagement what facilitate the learning process, integrate the new knowledge with the previous knowledge and experience and the how it can be very much relevant for the real life experiences So, accessibility and inclusivity are the basic features easily accessible, user friendly and builds a inclusive society learning society. So, that is why by giving the different kinds of alternative text for images in and accessible features. So, the learner and to make the learning very easy process, very smooth process, very and language to be used very in a very lucid manner it has to be explained and narrated and the and the so, that the user not only understands it better, but can easily navigate it navigate it learn it perform it acquire the knowledge and transfer easily transfer this knowledge to the workplace.

So, these are some of the scenarios of you know external designs for the rapid learning of a rapid learning how quickly can we organize or arrange for an e-learning program. So, some instructional design strategies for rapid learning how quickly the learning e-learning can takes place. So, strategies for immersive learning, immersive learning primarily through simulation job related situations, primarily through simulations role playing gamification. So, suppose we instantly want to develop some kind of quick sub skill some kind of situation awareness some kind of decision making skills quickly. So, that in that case we can also create a kind of simulated environment to bring that behavioral change in the learner and to develop the and to enable him to learn the sub skills and so, quickly through immersive experience learning experiences we can achieve it.

Then guided learning is also there coach and mentors are there to guide you through videos or through videos and online and online guidance. So, learning through exploration and discovery that is also is a it is a journey it is a platform that learning journey of map can also be developed and some visual through visual maps and visual indicators the learner himself can explore his own pathways towards the broadening towards the broadening is the professional career and skills. So, simulation is a such an environment software different software modules are used also and there are different phases the watch phase, try phase and do phase that means, how my observing this training program how can the learner start the practice. Story telling method is also very effective instructional strategy. Game ability to connect the learners so, story telling is a very potential method to connect to the listeners emotionally build empathy and all other positives attributes.

Similarly, the case studies and comic strips are also mixed examples of the story telling method. Then the gamification by using the game elements like points, levels, rewards, timers are that is the and facilities to effective knowledge transfer and incentives motivation that is intrinsic in motivation extrinsic motivation can also be addressed by you know engaging

the learners in different points and gaming points and the rewards etcetera. So, this not just a tool for entertainment, but it has the educational value also. So, not just for learning for fun, but also for gaining some kind of skills some kind of cognitive skills also. How to build an inclusive e-learning content design? So, inclusive design can must have a philosophy and it must create some kind of best possible experiences with the learner and using inclusive you know pronouns inclusive questions queries or key takeaways like how we are going to use it in our life, how we are this going to help the society, how we are going to build a knowledge society.

Because now a days knowledge is the power, knowledge capital is the knowledge is the very important capital in the all our business transactions and educational platform. So, how can we create authentic learning environment? Not just in not just educating them by designing the content, but engaging them, involving them and acknowledging their skills and opportunities, giving them the opportunities for you know exhibiting their performance, then demonstrating their skills, utilizing their abilities etcetera. So, how to make this environment very authentic? These are some of the personal choices that the learner can go through. Learners feel empowered and accelerated in the end of the course and of the curriculum. So, learners also learners need assessment questions should also be addressed like for example, when before designing an authentic learning environment and event we must ask as the course designer we must ask this question to our our self.

What does the your student want to accomplish their knowledge, previous knowledge, behaviors, how what that the student need to able to know about it, what the new skills they are they are they must learn about getting the proper employment and job opportunities available. So, what are the 21st century employability skills, what are the what are the requirement job requirements and what are the sustainability competences, what are the you know now this in the for the in the start up market. So, what are the in order to be start up start up owner, entrepreneur, what are the skills that we need to develop, we need to learn. So, for nowadays so, entrepreneurship skill and moreover in the digital platform digital platform also what are the entrepreneurship skills the learners need to learn. So, and to learn to acquire the skills and knowledge before starting their own start up before building their own organizations.

So, the process of constructing the valuable learning experiences how it can be incorporated with the new skill set, new skill set along with the you know all the all kinds of skills and technical skills, communication skills, then design skills, then you know entrepreneurship skills and all kinds of skill set how they can learn how it can be incorporated. So, that it will be more relevant for the for our community, for our people, for our for our youngsters to start their own business also. So, e-learning is not just for acquisition of knowledge and skill for, but for building your own organizations, building your own entrepreneur entrepreneurship that means, MSME is building your own start up, building your under all building your own enterprise all kinds of things so, is required. So, now, I am going to complete it here and I think you I hope you have all learnt and you can take the benefit of this learning content that I have procured from different sources and use it for different purposes not just for learning, but for business, but start up, for entrepreneurship, for all kinds of social engagement and academic engagement.

Thank you very much. Thank you. Next class we will go to discuss some other topic related to learning. Thank you very much.