

Psychology of Learning

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Lecture – 43

Psychology of E-Learning (Contd.)

Hello viewers, welcome back to this NPTEL course on Psychology of Learning. So, in the last class we were discussing about the psychology of e-learning, what are the factors that affects e-learning, what are the principles that we are going to use in the e-learning course design and what are the factors that affects the learners engagement and motivation and to continue with that. Now, let us see how feedback affects the learning.

So, as we know in general in even any classroom physical classroom situation also feedback is very important that is knowledge of the result, teacher's feedback and feedback that learners are getting through different kinds of quiz, tests etcetera. So, here also the feedback affects. How it affects? It gives a kinds of insight into all categories of learners that means, knowledge of their performance how they are performing.

It also helps them in improving their performance by practicing it again and again applying that knowledge and skills whatever they have learned in different kinds of situations. And however, in this context prior knowledge prime of prior knowledge experience is also very much required that is we call in education that we call entry behavior. So, entry behavior is very important before getting into any particular course or curriculum etcetera, because that is the prerequisite we can say that is the prerequisite. So, here prior knowledge is also very important.

So, it gives it is actually it is the foundation for any new learning experiences, new learning content and design. So, now, the what are the again it has e learning has also some side effects that is called as a negative impact of e learning that we have to keep in mind before you know and how to curb it as much as possible. So, here thing is that in physical classroom actually we can quit the classroom at any point of time or the teacher can know better understand that the students are tired and not motivated etcetera. But in e learning suppose we go on or go on for a long time of if the schedule is very mandatory and a very mandatory is that you have to complete it like especially in the in synchronous classrooms. So, here working memory a working memory get affected, because in working memory actually is the is the work bench on which we are presently working on working on the task at hand working on how to solve it planning thinking actively all kinds of things.

So, working memory as because it has a limited capacity it all it probably it may get affected with a continuous e learning programs. So, here cognitive it creates a cognitive load a cognitive load if extensively we are using the e learning classes or it has been made mandatory or it is being offered in the synchronous mode then it creates a cognitive load. So, because with over you know over content over content like over attention or even over a learner get exhausted with the continuously attending to a little listening to a going through

the content. So, that is cognitive overload takes place. So, that we must keep in mind before designing a course.

So, that is why in e learning it is it is desirable it is required actually it is advisable to prepare the video content for not more than 20 minutes. But after 20 minutes content we can also have the discussion in the charts. So, here e learning may increase, but how by reducing this cognitive load e learning may also use some strategic planning strategic approach to how to reduce this cognitive load in the especially in the working memory and how it can enhance the enhance the learning ability and the capacities of the learners by using different strategies multimedia tools at for the students engagement. So, we are not saying that we have to keep all the lectures 20 minutes, but we have to engage them in other ways. So, video content should only be 20 minutes 15 to 20 minutes, but we can engage the learners in discussion in charts in the other kinds of things by different strategies.

So, here now according to APA American Psychological Association. So, multitasking. So, in the multitasking is actually is not a convenient as it seems people think that he is multitasking, multi skilling, multi doing multiple things at the same time actually it enhances us skills and capabilities. It is actually not the same thing because even though when we are engaged in multitasking quickly we have to shift from one task to another task and task and different task it requires different kinds of attention, different kinds of processing, different kinds of information. So, it actually gives again it incurs the cognitive load also.

So, multitasking prevents us in focusing on specific activities. So, we if you want to get into the depth of anything. So, multitasking is a hindrance. So, and it also continuous suppose if we are continuously exposed to that multitasking then it also reduces makes our attention span very short and we we so that means, some academic stress happens, stress happens and you know fluctuation of attention takes place all kinds of side effects also. So, how to how navigating how to navigate these challenges through e-learning programs.

So, how to reduce the cognitive load? So that means, the cognitive load primarily because of the task at hand that we need to we need how much mental effort, attention, focus we need to resolve that resolve that task solve the problem. So, learning is highly influenced by our mental effort or the cognitive effort and so online courses it should be designed to minimize this mental effort to enhance the understanding to enhance the comprehension, enhance the retention is ok, but with minimum mental effort not to pressurize not to over exhaust the cognitive ability of the of the learner. So, it should be designed to minimize the mental effort cognitive load and to reduce the cognitive load and to learn more effectively maybe by using multiple tools multimedia content or by doing pictures, animation, videos. Nowadays many things many strategies many apps are also coming up to learn effectively with the minimum cognitive effort and reducing the cognitive load. So, that is why here language is also very important in the designing the content.

So, in e learning design while using the designing their e learning materials the contents the language of the contents would be very lucid, very simple, very you know and it should be highlighted the points instead of giving them in a narrative exhaustive ways we should also highlight the important things by using the headings categories bullet points, color coding etcetera. So, similarly we can also add the videos the info graphs, graphic pictures, animations, flow charts, tables all kinds of things in a strategic way. So, that it can not only offer the guidance, but in the, but also it enhances the level of understanding it is and by giving this kind of flow chart pictures etcetera actually it enhances the understanding ability

or the comprehensive ability. Because the it is a kind of mode of you know mind mapping or concept mapping. So, by remembering just that flow chart or going to the table etcetera at a stage the learner can not only grasp, but also remember it the whole thing whole thing together.

So, and from time to time constructive feedback can also be given. So, here another thing is a by reducing. How to reduce the cognitive load and engage the learners in a effective way? Again encourage active learning active learning that means, primarily participative learning. So, participative how to how the learners can participate in the online classes in the digital classes that has to be sorted out by the teacher or the facilitator or the course coordinator. Hence enough of problems opportunities for problem solving case studies and discussion forums and other kinds quizzes and other kinds of things would be given the opportunity in the e learning platform. So, so in in actually so we can ask them something to write on hand write them to give some their feedback some narratives.

So, whatever they have understood that is a key takeaways from the courses. So, they can explain. So, when at the end of the session end of the class if we ask them just jot down your key takeaways how you are going to apply it in your real life situation. So, they when they start thinking reflecting thinking jotting in down. So, that also it also summarizes the whole thing.

So, discussion all kinds of discussion collaborative work paired with the different types of games and simulations interactive activities to reduce the boredom and monotony. So, not to engage not just to engage them in a very positive and constructive way by engaging them in different kinds of games simulation interactive activities interaction etcetera, but to reduce the boredom and monotony. So, social interaction social interaction is very very important in the classroom in the online classrooms because when the learner is sitting before his lab his desktop or the laptop computer etcetera he should not feel that I am I am the only learner he should not feel. So, he should be very he should be very he should feel that yes I am within the class even though the class is that he can very well visualize can see the see the classmates the teammates etcetera. So, that is a video while it is that is why the in during the class online classes the synchronous classes actually switching on the video is very very important.

We may sometimes mute ourselves, but switching on the video is actually it makes the not just make the learners or the classmates or the peers happy, but also it may gives a kind of feedback to the teacher to the tutor online tutor that he has. That means, he is kind of feedback that yes everybody is attentive they are listening to and it gives a kind of positive signal to the tutor also. So, now a days also we are using. So, social media group chat video conferencing etcetera to engage the learners in very active learning process because the when the moment the learner gets active involvement even if they are in the online. So, it processes the information very successfully very effectively.

So, that and working memory also gets activated and the learner can retain the remember the whole thing learning materials very quickly and effectively. So, here another is the encoding. So, when we go through the information again it has to be encoded. So, the brain and the brain has the limited capacity. So, and simultaneously suppose when we are going through the content and simultaneously we are also writing now writing some notes in the in our hand notes in our copy.

So, that also enhances the enhances the encoding process because not just well passively listening, but noting it down. So, here the multiple engagement of the learner that means,

listening to the whatever the talks to the lecture says and at the same time jotting it down. So, keeping the notes while again attending to the online classes it also expedite our encoding processes like this in the physical classroom and the teachers actually the teachers the teachers we used to take the running note running notes. So, that kind of practice can also be repeated in the online platform. So, that all enhances the encoding process.

So, sometimes also to help out the to keep a kind of to practice online journal to track their progress. Similarly, at the same time the instructor can also the instructor can also note down keep it online journaling kind of to track the progress or the what are the comments coming up from the learners, what are the feedback is coming up, what are the new concepts, new issues have emerged. So, and what are the and again what to can to jot down outline of the key takeaways of the learners both for the instructor as well as for the learner is very useful to take note of the things. And immediate feedback instant feedback is also instructor can also give the feedback in the especially in the synchronous classes otherwise in the discussion forums. So, however, we can do one thing data analysis of the learner performance like we suppose in the after the end of the course when we analyze the whole data whole data about the learners performance not just their performance their satisfaction their sense of you know sense of satisfaction their feeling and their skill.

That means, how do they feel about applying it in the in the life in the day to day life in. So, it is usability it is usability it is applications etcetera. So, and any other future suggestions and the comments that that they can suggest. So, learner performance analysis learning analytics and data analysis can also be done at the end of the session end of the course to have a big picture to observe to give a feedback like what is what is the general perception of the learners about this and how it can be improved and how it these are going to be utilizing that in the day to day life. So, that is the immediate feedback by a simulation and scenarios or the forums discussion forums can also be given to the learners.

So, now, how then this there is a these are some of the strategies some of the techniques that how to make the e-learning more effective yes of course, till now we have already discussed that blended mode is the most effective one, but again it depends on the instructor to how to customize it how to design it how to strategize is as per the requirement and here the requirement of the learners the they are they are a developmental stage of the learners the nature of the subject the content. So, it is it is primarily the prerogative of the instructor after analyzing all these factors how to blend it how much to blend it how to blend it. So, what are the options can be this completely the freedom of the instructor. So, however, adopting the blended mode actually. So, well blended mode that means, partially online partially physical in this kind of things or partially different or different modes like you know video chat along with the online lecture content and the quizzes and the participation.

So, blended mode is always the most effective one and here again online platform as because our primary responsibility is how to motivate the learner because that is the biggest challenge how to motivate the learners and how to engage them. So, learners engagement. So, it is the most important factor. So, we have to use very sophisticated interactive tools learning tools and assessment tools etcetera to enhance the interactions learners interaction learner instructor interaction group discussion. So, and again that means, the learners should also be situated socially.

So, social situation is also there it can be created by develop by you know by building the by developing the different learning learner groups may be through a whatsapp subgroup may be

through email group may be through chat group or any kind of group. So, that all the whole class lot of whole class the total n number of participants and learners can be divided into subgroups and group can be assigned given the different assignments and they can also even in online also video chatting through mobile workshops etcetera they can also have a discussion live discussion. So, how so, here the two things are how to engage the learners not just at the individual level that means, individual level but also the community level the group level. So, personalize personalizing the course as per the learners requirement that is one thing and at the same time the learners would also feel that he is the feel the existence feeling the presence of the social activity social interaction group activity and. So, sense of social interaction social that means, community of learning social skill social interaction socially situated learning and at the same time personalizing the course.

So, that is why for from the very beginning the goals the goals learning objectives should be very very clearly specified. So, so that it should not give the give the make the syllabus overloaded as per the stipulated time as per the developmental stage of the learner this learner learning goals learning objectives should be very much specific should be clearly defined. And we can use the multimedia different modes of the multimedia audio video animation play and all the latest techniques that are using, but we have to use strategically not that at the same in the all the way using all the tools all the techniques. So, that it will be overloaded no as per the as per the requirement as the we can flexibly use it, but as per it is required it should not create overload, cognitive overload or mental stress. So, that is why source here the another thing is separate the teaching process from the knowledge certification.

So, how to create an interest within the learners among the learners that we are learning it for the sake of knowledge that means, we are to know something to know something to acquire knowledge to acquire the information and knowledge acquisition. So, that is one perspective which has been has to be highlighted rather than only for satisfaction. So, only for certification. So, separate the teaching learning process how we are designing how can we make it more effective more learners will be more motivated and that is one thing and then of course, certification is required acknowledgement is required for which that learners are interested, but we have to keep it separate. So, now the monitor how to monitor the educational progress.

So, from time to time we can use different quizzes, different questionnaires, different open ended questions, different assignments, presentations and so we have to know, but in a very flexible way, but in a very flexible way. So, therefore, the education should enhance the students not just to learn or acquire the degree, but to be to become a good human being, the knowledgeable human being, responsible citizen, global citizen, effective human being. So, that is why the so all the psychological perspectives that actually we use in the physical classrooms and traditional classroom can be used in the online, but however, the curriculum should take into consideration the individual's intellectual ability, their attitude towards the online programs, their motivation, their feeling, their moods. However, in online mode it is not very easy to get to know about the learner's actual physical condition or the mood or mental state or emotional states on the spot, but unlike the physical classroom because the direct interaction is absent and understanding from the body language is very difficult in online platform. However, we will try to prepare the content predicting assuming certain things it may happen depending on the age group of the audience of the target group.

So, we have to take into account all the intellectual, social, emotional, physical all kinds of comfort and discomfort of the learners. So, e-learning is a good system for education because

it gives enough freedom. First advantage is that freedom to the learner or the students to learn as per their convenience, as per their pace and based on their own strengths and weaknesses. So, it exclusively caters to the needs of the individual identity, individual requirement, individual skills and aptitude. So, it is very much personalized and individual individualized learning event.

So, however, successful e-learning should also give the attention to the characteristics of the individual like for example, suppose sometimes what happens we offer the courses for all adults, all adults in the sense that graduates or graduates. So, that means, we predict to assume that all the graduates are adults and by adults they may be professional, but with the enrolment we can also have a look have a preview of what type of professionals are there whether they are doctors, engineers or the teachers or the students, what is the category of what are the categories of the learners in online platform. So, accordingly we can have a preview of the learners enrolment and we can also assume some something. So, now, here in this to make the e-learning more successful there are very five critical aspects of successful e-learning these are yes all the human factors as you can see motivation, emotion, self discipline. Yes here another thing is that the learners they have to be very self discipline self discipline because here independent learner adult learner who are independent we can we have this academic self regulation they can monitor, they can regulate their own learning behaviors that is the self discipline social skills.

So, these are the and the stress that means, how much stress academic stress whether it is creating or not creating. So, these are the five factors which are very much important for a successful e-learning problem. So, in and it must be made very interactive more interesting and all the learner all the participants who can also follow the learning instructions.

So, now, the teacher's e-learning readiness here at the same time now till now we have discussed about the learners now it is teachers e-learning readiness teacher must be prepared for designing all this e-learning context that is why the teachers psychological readiness is very much important. For example, his mind mindset his attitude and moreover he the teacher in order to offer a offer an online courses and he must have the sufficient experience and mastery of the content. So, it is very important to change the mindset of the learners the teachers of the teachers before preparing anything any e-learning courses because and technical skills of readiness like you know influences of the success implementation technical skill readiness like whether he is equipped skill he has the skills and he is equipped with the necessary knowledge and mastery over the content that is also thing and technical how to use it how to use how to design the e-learning contents by using different features apps etcetera. So, that kind of technical skills are also all to be there and demographic socio economic motivational factors of the teachers are also very important like if he feels that it has the relevance for the larger audience it has a learner relevance for the all the graduate students of the country or any particular categories of country like the teachers or the professionals etcetera. So, considering the necessity of the courses for the audience for the audience larger audience or different categories of audience then he has to prepare accordingly. So, in virtual learning environment actually the usability criteria actually refers in virtual learning that is first thing that learnability. Learnability attribute says that it refers to the speed and ease with his novice learner user can achieve the proficiency.

Like for example, in your courses for the for in virtual learning environment what happens the learner learner must feel that that means, unlike that means, you are we are designing it that any novice I mean non techno savvy non techno savvy any novice user of computer he

can also slowly and steadily achieve the proficiency with the system with the. So, learnability that is called the it is a user friendliness or learnability of any novice user novice learner is also possible.

Now efficiency here the efficiency is that refers to the degree to which the system supports the performance like whatever you have prepared it is it supports the content or understanding of the content and experience users and also it also enhances the it also enhances the skills and performance of the expert learners or the experience per users in the short span of time as well as it also keeps them motivating for you know it must also content retain the content. So, they you can also engage them the motivated of the you can say smart users or the active learners. So, to hold them back to keep them engaged as on to to hold them for the long time till the end of the course that is also it must be efficiency and effectiveness these are the things.

So, the content the must be that the way it has been designed it must have the it must have the efficiency to hold on the to motivate the experienced users also and it must be effective in the sense that any user any novice learner if it is learns the courses he can understand he can he can gain and his performance can also be improved.

So, memorability again another the to what extent the learner can remember how to accomplish the task using the system. So, memorability it also degree to which the user particularly internet or the casual user that who has not very techno savvy. So, there also as because the slowly moving towards the you know towards the Google meet or the teams Microsoft team and how to navigate it especially the navigation to go to the chat box to the to you know to fill up the things in the Google form in the quiz and how to upload the things PDF upload the things in the portal all these things they must be they must they can remember. So, memorability is also an important factor and errors how often the learners they commit the mistakes of missteps.

So, these are also the factors satisfaction emotional experience of the learner that is also important. So, these are the crucial critical factors for making the e-learning a successful learning. So, we have to take care of this. So, user friendliness and successful engagement of the learners and user friendliness and again being alert about the missteps or complicated steps or the errors very often being committed by the learner.

So, we have to take into account. So, use of the topic map. So, that is why from the very beginning a kind just like the content contents a topic map how we proceed how will a concept map or the my picture a flow chart should be given. So, how we are navigating how we are moving towards the towards the topic 1 to till the end of the chapter. So, use of the topic maps can also be very it is very it is for to help to help the users because it is user centered navigable to navigable index that is from 1 by 1 like you know with the with the clicking of the page numbers automatically the chapter comes up. So, and the instructor annotated and in case of sometimes what happens clarification suppose we need a better clarifications.

So, then clicking of that how it are these are being linked up with the dictionaries or or the and encyclopaedia or the further details etcetera and how quickly we can also retrieve information can be retrieved. So, these. So, these topic map maps are also like the flow chart or the you know content online content index of it also which also helps the learners in you know when they are learning through the books especially the content is very exhaustive. So, topic map learning is also a tool and explicit navigation and it also enables a meaningful learning. So, now, especially when we go through the e books e books so many it is very exhaustive in so many things, but with the index with the you know topic map index we can

quickly go to the which pages and automatically by clicking on the page number also we are getting the learning methods.

So, it this topic map maps also it reduces the cognitive load and that saves the time also. So, now, boosting how to boost the learners' engagement with e learning content that we have already discussed till now prior knowledge is that can be that affects as because it is very much required it is prerequisite. So, we can also have an assessment of the prior knowledge of the learners by with some kind of assessment of the baseline knowledge with training or we can say some entry level test etcetera. So, accordingly we can develop the training material etcetera and learning by doing we can we have to give them some hands on activities some group discussion some simulation some quiz etcetera to give a kind of experiential learning that is the learning by doing and allow them to reflect on the content and give their feedback and their feedback and their suggestions. So, similarly driving the motivation explaining the real life application. In the beginning of the course in the beginning of the course we can price them about the its relevance its utility its real life application etcetera.

So, that in this way motivation and goal setting goal setting tools can also be used from time to time to set them to allow them to set their own personal mastery goals and making it a very you know socially constructive knowledge platforms. So, training and development also it promotes the team work networking collaboration and it also gives insight to further diversify their skills and strategies and it is a it also creates a kind of healthy competition and culture of collaboration.

Providing feedback time to time or with regard to their performance their improvement or the time you know how to give to any other new suggestion any other how to clarify their doubts how to bring the positive changes all with regard to in a to z anything it can feedback can be given from time to time promoting self regulation and we have to regulate navigate we have to move on in such a way that we have to take them give them give them the directions and take them forward in such a way that automatically it will promote their self regulation. Self regulation skill like how they can control self control of attention they can remember they can use the memory strategies they can navigate easily they can retain the things they can answer the quiz they can follow the instructions they can use the multiple tools and apps inherent in that model in their design. So, these kind of things automatically it becomes the learner becomes more independent self regulated learner in navigating not just in navigating, but understanding and performing well.

So, accordingly we have to develop the learning goals performance goals of all the e-learning courses with details specific and things etcetera and so, that the learner can exactly identify the skill set he is requiring they will be developing or maybe that in future they would like to like to attain such kind of course, courses like to plan accordingly for the new programs etcetera. So, now, I am stopping it here. In the next class, we will discuss further. Thank you.