

# **Making Learning Engaging Through Interactive Games**

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**Week – 01**

**Lecture – 03**

Today we are going to discuss what are the benefits of game-based learning and we will try to provide some scientific evidences around that. I mean research done by people, what students, learners of different ages across disciplines have experienced. As we get started, first let us try to understand this concept of play itself right, in a very basic sense. What does the word play mean to you all? In a generic sense, before even we get into game based learning, what does the word play mean to you? What kind of emotions and associations does it invoke? Let us try to answer these and where do you experience it most often? Fun and enjoyable. Fun and enjoyable is an experience. Achievement.

Achievement is another aspect of play, fun and enjoyable element is one. Adrenaline rush, do you mean a sense of competitiveness, achievement means the end goal to working towards an achievement. Adrenaline rush is in the process of working towards that, correct. Relaxation is a dimension of play, yes.

So, we have had different dimensions, fun, enjoyable, relaxation as a dimension, achievement, adrenaline rush. What other dimensions can we all think of? Teamwork, working as a group, right. Strategy. So, let me just write down. Play means fun, enjoyable, relaxing, then we have achievement, we have adrenaline rush, we have strategy.

Any other dimensions we can think of? Learning. How to be better at it. So, essentially learn, in a sense it is towards achieving the end state of winning. So, how to get better at it, okay. How to get better? Any other dimensions that you can think of? Sir, I think there is a sense of mindfulness when you play.

Mindfulness, very important dimension. Can we also say it is the nature of being involved or being immersed in it, right? That is what you meant by mindfulness. Anything else you all want to add to it? Leadership skills. In what sense? So, when you play a team game, you are the leader of a team and you try to organize and you build your leadership abilities. Any other answers? When you start playing game with time, you adapt to the interviews,

the game, the rules, the skills, the tactics, all those things you learn with time.

Adaptability. Any other dimension that has not come out yet? Social engagement, that is a very important aspect. In some sense it is also like team work that somebody mentioned, so yes you work with people, Okay these are good answers, I think we have touched upon most common answers from different perspectives, right. So, I have run this poll to many educators and learners, these are some of the answers, let us go through some of the answers that have come. My guess is that there will be a lot of match in what you have answered and what they have answered too, but at the same time there could be some things new also, let us see.

play is seen as something a wrapper of something serious. There is some seriousness in it, but it is a you wrap over around something light around that serious thing that is one perspective of play. The second dimension is about why we all like to play is that there are no deadlines, goals, targets, which could be good and bad in a sense, sometimes we need targets, deadlines, goals in order for us to be making progress, at the same time they can get very tiring too. It can take away the joy of learning also. How many of you have felt that if only the subject did not have a grade or an assessment or a deadline, I would have been able to enjoy and perform better.

Sometimes we all have that feeling, right? It is because of that short duration in which things have to be done that takes away the joy of learning. Otherwise you might have enjoyed that subject. So, sometimes they play a non-helpful role. It causes constant stress and deadlines, targets, etc. They do not help the learning process.

Third is, we have always been programmed towards achievement. There has to be a tick mark, why I have to do this, there has to be an ROI, I have to do this for this sake, for x sake, for y sake, etc. We all have our own reasons, which is a good thing, but sometimes there is a joy of doing things, not for the sake of mastery, but for the sake of it. What is a classic example of such activities? All of us might be having such activities. Speaking to friends, generally chatting, yes.

Dancing, extrapolating dancing any hobby can we say, hobby without having to win a award or a competition or a necessity to participate in a cultural or then it becomes a goal or target orientation. I like to sing therefore I sing, I like to dance therefore I dance. It can be reading, it can be all of us have such activities we just do for fun right. So, there is playfulness in that and so it is a just a fun winding pursuit. All of us need fun as a dimension in our lives and the fifth one is again without protocol.

Everything is very formal right, most of the things are very formal, you have a course,

you have a learning methodology, everything is predefined. Sometimes you wish you had some informal learning, we all long for something informal, just explore and find out kind of a thing right, explore on your own and learning. So, there is playfulness there and as some of you had mentioned Games or play bring out the element of being engaged, entertained and engrossed, right. We get immersed in it, right. We get entertained, we get engrossed in it.

Some of you use the word mindfulness. We just do not seem to be wanting that to finish. And another dimension is that in the old Gurukul kind of teaching this possibly was practiced, that was one perspective that came out, where it was all not very formal education, everybody was allowed to explore their areas of interest where structures and syllables was not there. The individual strengths and inclinations of the students were mapped and they were allowed to explore in that area, play not in the fun sense, but exploration aspect was there. And lastly, of course, no obligations, no responsibilities, it takes away a lot of burden from our minds and therefore, we want that state to continue.

So, broadly matching some of the things that you said, but there are some different dimensions also that are coming out here. Now, moving on, coming specifically to learning, which is what our main area of interest is. Earlier we saw play as a general concept, right? Playfulness and all that. How does it help in the learning process? So this is a depiction of a simple snake and ladder which tries to illustrate what are the things that cause the engagement to go up. Whenever you learn something, what makes the learner motivated? And vice versa, what are the things that put a roadblock or hampers or dampens the learning enthusiasm.

So, we are purely talking about the learner engagement. These are some dimensions captured. Once we discuss this, we will take your inputs in terms of if this does not cover anything specific. So, let us go through first the blockers. Blockers are the red cells.

Assessments, tests, exams are meant for a purpose, to help us know where we need to improve. But invariably what happens is we tend to associate our, there is a sense of notion or our capabilities with the marks that come out of a test. And most learners form an impression, okay this subject is not for me, I have not scored well and therefore it is not for me. because it has to be also done within a particular semester or within a time duration. So, assessment is not helping the learner improve.

How many of us do you think by and large it tends to happen? Of course, I am not trying to generalize saying that assessments do not help at all, but many a time it plays the opposite role. So that is the first red cell that we see on top. The second thing is when we have a lot of theory material or when we learn alone with a lot of books, there is so much material to

read and it is between us and the books, it is a lonely journey, specifically if the subject is not interesting, ok. You will have to memorize, you will have to understand the concepts. It needs a lot of practice and sometimes it gets overwhelming learning alone.

How many of you have felt that while preparing for exams? Some of you for some subjects. We cannot generalize. The subjects that you like probably may have lesser of those moments, but the subjects you may not like or probably you do not understand or you are wondering why we are doing certain things. You will have a lot more such moments possibly. The third aspect is conceptual difficulties.

You may like a subject, but there are difficult concepts. Once again it becomes a deterrent. How do I overcome that block? You need a lot of practice. but it is not fun to practice also sometimes when the concept is difficult no matter how hard we try it seems to need a lot more practice. So, that is another deterrent one is the learning alone was more about the lack of group learning or what we discussed earlier in terms of the social learning that comes in while doing the form of a game, but this one is more about a specific concept itself.

And then we have been used to theory and a lecture mode of learning and in today's world the attention span of all of us is less. It is getting lesser and lesser because more and more interactive, attractive content is being delivered. Gone are the days where only books were the source of information and in the pre-internet era probably this was probably the best mode available, but now it is not. There is a competition between the amount of information that comes in more attractive forms versus what is available. So, that becomes a challenge and therefore, sometimes we tend to form opinions lecture based and non interactive form of learning is a bit challenging.

So, these are four major deterrents that hampers the learning engagement. Anything else you can think of beyond these, that is not been covered in this? When you say lack of motivation does it, is it because of assessment, what dimension of it or is it something outside of it? Mostly assessment, right. So, that aspect has been covered. Lack of dynamism in the course which we are studying. we tend up to something new or we have a inclination to find something new in it but that course is structured in a specific manner and it has to be followed in that direction that the dynamism which comes naturally does not get fascinated with the normal learning process in a theory class or a course.

Course structure, the way it is organized, if the material were presented differently or if you had the freedom to learn the way you wanted, probably the learner will be more engaged. You can keep on trying your strategies. Any other dimension? Anything else you can think of which causes learner disengagement? Ok, we will move on to the things that

actually motivate us, the green cells here. So, most of us want instant feedback, right. When the feedback is delayed, it is also very difficult for our minds to understand, correlate.

one tends to get quick feedback. You lose out a point, you know why you lost out a point, you are able to course correct. It does not have to be a game, but any kind of feedback when given quickly or between the task done and the time at which you get the feedback, there is a higher chance and there is a better probability that it sticks. So, game naturally has that benefit. Whereas in a regular structured course sometimes, although you cannot keep playing every day, the time between when the concept is taught versus the concept is assessed, there is a big gap and there is a big lag there. So, that is why sometimes quick revision quiz at the end of each class might help correlate what we have learnt.

because it happens on the same day itself or within the same course hour itself. And interactive and fun is very clear, all of us want interactivity. and fun that is we do not want things to be static. If it was a lecture which is only one sided right, where the other viewpoints are not heard, it does not become very helpful for the learner. And it is not only between the teacher and the learner, it is also between the participants.

Sometimes you need a dialogue, sometimes you need an argument, you need to dispute each other's points, so that better aspects come out of it, the better learnings come out of it. The next aspect is skill-challenge match. Can you guess what skill-challenge match is? You don't know something, but you are challenged to do it.

So, you become skilled in it. Okay. With your skill, you can do the challenge. You are not skilled enough for the challenge. Okay. So, what you meant was correct, but in this context, Our skill sets and the challenge posed to us should have some kind of a correlation in a ballpark.

It can be slightly higher that is okay. There is an acceptable band. Let us say you are a master of a certain subject. You know a certain level of proficiency you have in a certain area, but let us say you the learning or the lecture or the source of information which you read. I am not saying necessarily it is a classroom, it could be an article, YouTube, it is very basic level. You will just browse for some time and then will get disconnected.

Or if it goes to the other extreme, you have a certain level of proficiency, but the topic taught through that material or through that person is very complex. It goes on the other side. And therefore, the skill and challenge, there is a mismatch in correlation. So, we need to find out ways by which the material presented is of more or less the same you cannot exactly find out each learner skill set, but more or less in the bandwidth. So, the typical traditional sources of learning we will not be having whether it is a source of a book or a

because it is a book is a book which although authors try their best to try to present it to.

What do you say learners in a way that they understand, sometimes it could happen that they will not be able to, it will be impossible to gauge any kind of learner, every kind of learner. Whereas, we can build custom games, appropriate to the skill sets for the same material. The last is learner centricity. There is a something called VARK. VARK is our human abilities or inclinations for certain type of learning.

VARK is visual, audio, read-write and kinesthetic. Some of us are visual learners. In fact, visual and auditory systems play a very big role in our grasping process. A picture speaks a thousand words they say or a diagram we are able to visualize things. Audio again some of us are more inclined towards audio based things. Read-write of course is the traditional typical approach.

There are some of us who are inclined towards it and kinesthetic is activity based, something that involves a when a lab is always attractive because you are doing and experiencing something. And each learner has a different what you say inclination for each of these right Now all these dimensions to different extents can be brought in a game. I would not say every game caters to everything, but better than a text book these can cater. Of course, text book also can be illustrated with visuals, may be sometimes you can get an audio CD or a video CD with a text book, but in a game it is lot more possible to bundle and do it at the individual topic level. Anything else you can think of beyond these which are stimulating learner engagement? Practical learning labs.

Practical. When you see things in real life, you understand the things better. Yeah. Rather than just reading it and memorizing.

Yeah. Real life. Yes. Then? Anything else? Having realistic end goals. Okay, that is more at a individual learner level, correct? Which is correct, which is true. True, I mean in one sense it goes to, it is somewhat correlated to skill challenge match. The skill challenge match is more got to do with the way the game has been designed. Here it is a individual attitude towards what they want to learn or not learn out of it, right.

If you are at a certain level, it is better to set the mastery levels to a certain slightly better level rather than trying to be the best of all. If we are let us say at a 50 percent skill level, it is more realistic to achieve 60 or 70 than shooting for a 90 or a 100. Good point, good dimension. Group projects, yeah, very true which is why that learn alone opposite is working together. This has not been explicitly highlighted as a benefit but games actually help bring the social element out.

Valid point So hope you are able to correlate how the learning and games are connected with these granular breakdowns. That is the intent of preparing this. Now, let us do this. So, we are in the 21st century right and the skills that are needed in the 21st century are vastly different from even 10 years, 15 years back. I mean you may not have experienced that world, but increasingly those are the skills that are going to be mattering more and more.

So, let us play this crossword to see whether we are able to get it right. So, you can attempt it in any order. Fourth one is growth.

Third one is creative. First one is perseverance. Yeah. Sixth one is peer learning. Sixth one is peer learning, correct. The second one is dash skills matter beyond aptitude and academics.

It starts with E. The fourth letter is T. Emotional is the answer. You got most of them right. I think the first one, if it is either persistence or perseverance, both are okay. I mean it is fine. The concept is the same. So, most of these dimensions, it has been found out that different type of games help the learners acquiring these kind of skills.

It is all about persistence when would you like to persist somebody said that games you would want to try them again and again For one to try them again and again, we need something inherent in that which is likable compare it with all of us want an achievement but the moment we get low scores or scores that are not to our liking in a test. We do not try to persist if it happens for 2 to 3 right, whereas 2 to 3 game losses do not feel painful. When you lose 2 to 3 times in a game, we do not feel that bad which means game has that element of a fail safe environment which helps us to try out again because there is nothing to lose. So, that causes us to persist that helps build the growth mindset because you need a conducive environment for making that happen. And we have experienced some games where we have gone through social emotional skills.

There are games that help build peer to peer learning. We have learnt from each other during the game play process. And naturally only when the learning environment is happy will we all enjoy it and that is kind of provided by the most of the games. Most of the reasonably well designed games provide that happy environment. So, now let us take a look at what has happened with our teaching learning over the years. I mean of course, now it is changing for the better slowly educators have started realizing, but it is yet to fully percolate, is my feeling.

When we were in primary most of us enjoyed our lives. The most of the children love their primary school. because there is a lot of visuals and sound. There is a lot of fun, fun

activities whether it is class subject related or not there is a lot of fun in general. Activities are also very high, projects they are in abundance, information to remember, memorize, read is on a relative scale low, simple text books not very complicated, a very attractive visuals, it was lot more fun. And therefore, very high engagement from different dimensions if you see in almost all dimensions, it scores very high from a learner engagement.

Slowly we all go into secondary or high school, then we go into college or corporate. What tends to happen is the visual and sound start getting lower. Although it is not 0, it is still there, but it is definitely lower. Fun aspect takes a back seat, a lot more text, activities slowly start tapering down, lot more theory and therefore, all elements tend towards lower engagement. As you go towards college and corporate, I have indicated the visual and sound as slightly higher compared to secondary and high school because we use videos.

They use videos and audio, so that extent it is higher, but the other aspects are definitely on the lower side. Fun during the teaching learning process or in the exploration is definitely still continues to be lower and text and information is still high, there is a lot more to remember still a lot more to remember, still a lot more both in terms of facts as well as concepts. Facts, terminologies, concepts all that continues to be high and therefore, for an average learner the learning environment continues to be challenging. So, there is a huge potential for learning from the primary school that is why they talk about the Montessori method right that is a very popular method, but anything that is filled with games, activities, involvement, engagement is going to really change things for the better when it comes to learning.