

# **Making Learning Engaging Through Interactive Games**

**Mr. Kartic Vaidyanathan**

**Interdisciplinary**

**IIT Madras**

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**Lecture – 2**

We will get started with quizizz, another digital tool which makes learning very enjoyable and interactive used across K-12 learners and also higher education institutions and in fact there is a version available for corporates also, but we will be focusing on the education dimension. Finally, all learning is very similar, although the kind of questions you get asked varies, the engagement elements are very much similar across ages. So, first let me give a demo of the tool and then we will have you experience it. When I say demo of the tool, we will actually experience a game created using the tool. And then we explore how to create such a game, what are all the features that are available to design such a game and then we will have some time for individual exploration and practice. So, to begin with what I will do is I will try to show a game that is been designed and we will start playing it.

There are multiple ways of playing this game, one is group mode as in we all play together as a class, another is individualized assignment mode. So, we will try to play in the group mode first and I will be clicking on the start a live quiz. So I click on classic and I continue. So in your laptops or mobiles, you can go to one of the two things.

One is go to [joinmyquiz.com](https://joinmyquiz.com) and enter the code. Alternately, I will show the QR code and those who have mobiles can scan it. Start playing. Either you go to [joinmyquiz.com](https://joinmyquiz.com),

those of you who are on mobiles you can probably scan and those who want to play on laptops go to [joinmyquiz.com](https://joinmyquiz.com) and enter the code as 024134. Once you have all scanned let me know. So as you scan your names will start appearing here. There are 16 participants so far and as you enter you will get to see your names on the board.

Shall I move on? Yeah. Now I click on start. I am starting the quiz now. You will get a series of questions that you will need to start answering. So on your individual screens you will get the questions and the leaderboard starts appearing on the teacher's dashboard.

For now you need not focus on that but from a tool familiarity perspective I am just sharing it. So right now as you can see there are 23 players logged in and others also can dial in even after the game has started. For the benefit of those who came in a little late or who haven't joined yet, you can go to [www.joinmyquiz.com](http://www.joinmyquiz.com) and enter the code as 024134.

You can see the code on top. Game code is 024134. Thank you. So as the quiz is going on, there are different metrics displayed. These need not be of interest to you right now, but from a tool perspective, you can see the overall accuracy of the answers from the overall class part spent perspective that's showing on top as a metric.

The leaderboard can be changed to show the top 5 only or the entire class. This is more from a tool perspective, tool feature perspective. Please continue your gameplay. So as the people start completing, it starts showing the completion stats also. 12 out of 25 are done.

The rest please take your time, but I just wanted to describe the feature as it appears on the screen. We'll probably close it as we near 20 because I'm assuming you all got an idea. Some people joined in late, but I just wanted to all of you to have a feel of Or if you've all got a feel of it, we can close it earlier also. Those who joined a little late, can we close the quiz if you've had a feel of the questions? Or do we continue? We'll go on till 20 people complete. Then I'll close because otherwise the long end of the tale will go on.

So I think 20 is a... I think most of you dialed in in the first 2-3 minutes, so.

.. We will close it when it is 20 completion. This shows the questions view, which we'll discuss also towards the end. But even while the quest is on, it shows the question view. So looks like, I think 20 plus have answered all questions, although it's not getting reflected in the first page yet, because of probably the dialing in of a new player. I'll probably close it now.

So great show to the winners, but this is just more a representation and depiction of how this game is played. So it's just for illustration purposes. So all of you are winners. I mean, I'm sure all of you have done a lot of chemistry before getting in. So now how do we, let us try to analyze this game and compare it with something else that you have played in the past or even otherwise, let us say, even without any comparisons, how did you find it? What are the elements that you noticed during the gameplay? It contained all kinds of questions.

Okay, good. Very good. It asked first the feedback that which topic do you like, so that the next questions will be based on that. Okay. So, in between the game, it will ask few, it will give us few options. Based on that, we will have to select that next question should be based on which topic.

Is it because you saw a question which topic of chemistry you liked? Is that the question that made you think this way? Yeah. Previous one more question was there. Which is your favorite topic in chemistry? And after, just after that, question related to that game. That was just a coincidence. It is not an inbuilt feature, it just is a coincidence.

That is not a feature, but the other point that she mentioned about variety of questions is an important point. It is not yet customized to that extent so far, but this tool has been evolving over the years. Maybe someday it will also have the feature that you are looking for, that you mentioned now. What else? It gives you chance to rectify the question which you are wrong.

Is this important? Yes. Right, we want to make the learning, what do you say? We just do not want to give one chance, because everybody can learn to correct their mistakes and improvise. So, that is a very important feature of any learning tool. Good, good observation. What else? Subjective kind of question for someone who is not trying to learn that topic, those will be very difficult, but they are great for someone who is learning that topic right now. Can you elaborate that? Because when we see those questions without options, out of the blue, it is very difficult to answer them.

Okay. You mean to say the fill in the blanks kind of, not fill in the blank kind of question, open ended questions. Okay. So, we need a lot of the questions that you saw had some kind of an option, right, which makes it easier either a multiple choice or pick from the drop down or match the following, reorder so that all these are additional triggers because we just do not want to be only a, we do not want learning to be only memory based. We cannot answer those questions if we have not read or studied or understood, but having said that the memory component part is simplified by giving those options. But then again sometimes you may want to ask questions to see the understanding rather than it can even be that is why the open ended questions are also there.

What is your opinion or have they understood the concept? Because concept understanding is not same as memory, right. Have they understood the concept? To that extent you can have a open ended question which is why that also is built into this tool. So subjective questions i guess it could be improved because the answers are like a lot of

answers can be possible. For example, there was a question how the elements are arranged in a periodic table. So they could write like how i for example i wrote to Atomic number wise, but that is wrong answer because atomic number is the correct answer.

Good point. There is scope for improving the fill in the blank with because people can word it differently. That is a valid point. Probably we need to forecast what all kinds of options are possible and then include all those options in the answer set. Or we could make a question like this that there can be just one like a fill in the blanks and then something else is written so that there's just one word which we can fill.

Correct, correct. Make it less prone for errors. It is not an error really, but different ways of wording the same answer, which is correct. In your case as you said, atomic number wise is also an option, whereas it actually accepts only two options.

Yes, fair point. Fair point. That is a good observation. For one power up, there is one power up after shielding, you can shield and your points won't be reduced if you give a wrong answer. But let us say you do not know the answer you are not studying that topic then that power up is kind of useless because after you use the shield they ask you to answer the same question again instead they should not reduce the point and go to next question. So, let us first there are two components to what you have brought a power up as a concept So, we are looking at game mechanics that make it interesting, right.

So, power up as a concept. What, why, in what way is it important or do you see it is relevant in building this game? Why do you think it is there? It is a simple quiz you, there is a sense of surprise, potential to increase your points in the form of power ups ok. There is a option for strike also we can stop others to get the points. Right right did any of you try the strike option? Some of you saw the leader board and tried striking the leaders.

Is that what you did? Yes. Okay, good. Nice. These are all very recent features which were not there earlier. This tool has been evolving beautifully over the last 3-4 years. First came across this in 2020. And back then it had only multiple choice, fill in the blanks, it had poll probably and checkbox and probably one other option, the open ended and the fill in the blank, that is all it had.

They are really slowly enhancing the tool, they have enhanced tool and it is very popular across many countries in the world now for K-12 education. It is a company based in which has a significant office presence in Bangalore and the US, but of course, they are spread worldwide. So, it is become a very popular tool. Coming back to our discussion, so power up is important in that sense. These are small mechanics and trying to reduce

the other people's points.

We saw that in Gimkit also remember. So, these are tools that will one is enhancing our own points through actual knowledge of the question. Another is through these boosters. Third is reducing the opponent. So, this is more to introduce this competitive sense, right? What else? Sir, I think there are lifelines as well.

Yeah. I got it later, three lifelines. So, they can also help in answering the question more correctly. Okay. When you say lifeline, I think you are referring to the redemption.

No, I think three... Lifelines came, one was shut, one was I guess 50-50. Okay, okay, okay, you mean the power up equivalents that options came for you, okay, it is not called lifeline, was it mentioned as lifelines or you are terming it as, fine, fair enough, now I understand. Fair enough. So, something that aids you in the answering of the question easily or which boosts up your points. It is this is borrowing different small game mechanics from various other sources.

That is what all edtech tools do. Anything else you noticed as interesting in this tool? Once we finish the good aspects that you notice as a group, then we will go to what could be better. We have discussed most aspects. Fine the music also is I think, I don't know whether you can adjust the music but that also adds to the flavor of the game I don't know how many of you notice that or you are involved in the gameplay itself. But for some people music aesthetics all that play a role in how much they enjoy the game. Okay so now the beauty of this tool for a teacher is that at the end it provides the data, do not worry about who wins, who has won and all that, that is more for general fun purposes, but let us look at two type of matrix, one is at the student level, another is at the question level.

We saw that in another tool also. This goes to show which question or topic is broadly understood by most people, which ones are hard that need more explanation. So, as you can see question 1 was hard, question 2 was. Few more questions down the line they seem to be fairly easy, about 80 percent of you got it. Again towards the end we find one question which is 33 percent, 56 percent etcetera. So, fair enough and then there is a color coding in terms of correct, incorrect, partially correct.

Partially correct is for that match the following kind of questions, ungraded and sometimes it times out and all that. So, here again it provides analytics at the question level for, each question how many got correct and incorrect. This is a different kind of a break up. That was more a percentage level break up.

This is just, these are all for analysis. So now again there is a feature for assign practice. That was a live gameplay with everybody playing in the class. There is another mode which is assigning it with a deadline. We can customize the deadline and if we assign a homework, again there is a different game code that gets created which can be distributed for practice purposes. So, this is as far as the tool and the gameplay are concerned.

Let us try another mode, again we are just going to explore this mode, we may not play this game completely, just to see how this mode works, which is try mastery peak for improved class growth with spaced repetition. Earlier was the classic mode of game play, now this is mastery peak for improved class growth, so right now the class accuracy is 71 percent, already I am sure Even if we play now in the classic mode again, the class accuracy will definitely go up. You would all have learnt from the mistakes and let us see what the mastery peak has to offer as a mode and then we will go into how to design this game. So what we will do again is now go here and mastery peak mode this time. So mastery peak, it says tweak difficulty with show answers.

You can now show, choose to show correct answer options immediately after the student responds or hide the answer. Okay, let us ignore this for now. Let us try this mode. Again, we will not play till the end of the quiz.

Let us just try this mode out to see what it has to offer. So people on laptop you can go to [joinmyquiz.com](https://joinmyquiz.com) and code is 916100 and those who want to play on mobile scan the QR code. Okay once you are ready, we can start. Shall I start? Here it shows a different kind of a UI.

It is like climbing a peak. It depicts the learners on a trek kind of a thing. Where each one is. This is a more recently introduced feature where it visually depicts where the learners are on their journey. So Yashasvi has triggered an avalanche. Are you finding a newer experience inside or is it more of the same? Here it shows people in different tiers.

Diamond, gold, silver, bronze and iron. Depending on the progress they have made I guess. This is a different kind of a depiction. Okay, Tony Spark has triggered an avalanche. So slowly people are entering the mastery zone.

The screen is shaking. Slowly but surely, I think all of you will get there. So have you experienced the newer mechanics in this? Apart from avalanche triggering, are you finding anything else? So, if you have explored, would you like to complete it or do you want to close it? Complete it? I guess more than half the classes now got into that 80% zone. So, hopefully the rest also will soon get there. Maybe like last time, we will wait for the 20 mark, 20 student mark. Another two more to go and then we'll stop the game

and analyze if you found anything different and interesting.

Okay, we've reached the 20 mark. I'll probably end the game here. The reason why I ended the game is just to give you the feel and then analyze once again and then we'll go into learning the game design. So again, it's a different way of depicting. Within different tiers, see earlier there was a single set of winners across the 20 odd players. Now, in different tiers, the winners are being shown. So, here are some interesting statistics in first try how many got and with repetitions how many are able to master.

So, those kind of statistics are displayed, again it is nothing against your personal knowledge of the subject, it is we are just objectively viewing it in terms of the tool and what it can provide for the learner. So, any observations here, any comments in this mode? Anything different you noticed in this mode? Okay. Smaller games within the larger game. Okay.

So, it adds variety and as well as gives you a, mainly it adds variety. What else? There is no power of like strike or shield which sort of makes it such that it is not a competitive thing, it is more about going at your own pace and trying to finish. So, it is not about winning, it is about going at your own pace.

Each learner has their own pace of progress. It is a different tone. Yeah. What else? What is in store for you? You are not told upfront what it is, right? Maybe it is intended as a surprise element you I mean you take a chance and risk it that could be one. It is a new like. It is another this could be given as a feedback for improvisation of the tool also. I mean they can probably keep it in both modes by keeping a setting right they can either announce the power up up front or keep it hidden and design the game both ways, both have their advantages. Any other observations? See one point I liked about the tiering and the classification right, lot of times it is so important in as learners as well as in other fields I noticed it I am just going to give an example outside of learning which I noticed in something called 100 days of running ok.

Usually, that was a big learning in terms of how metrics have to be measured and that is applicable for all kinds of learning. I am glad in some form they are trying to use it. Obviously, it can be refined. See, let us say we are all kept a quiz on a certain topic.

This case it was chemistry. Now, what is the audience? Usually there is a one size that fits all test. These are the questions and these are the participants. No change in questions, irrespective of the background of the audience. Now what is the drawback of that? See at least you are all science and engineering students. So a chemistry quiz is Is a like you are having a fair upper advantage itself I would say in terms of facing that quiz compared to

most.

But if it was a generic audience and if it was a chemistry quiz most of the students or the participants some will be at a disadvantage some would be at an advantage. Even among science and engineering students some of you may have a flavor for it. Some of you may have a flavor for physics or maths over chemistry etcetera all that widely varies and how recently are you in touch with the field that also matters. You may all have done chemistry, but it is possible that some of you are more closely in touch maybe your engineering discipline allows you to be in touch and some others you may not may be out of touch. The analogy that I would like to draw in this 100 days of running usually if it is a marathon right, what will happen? People across all age groups will run and there will be only 1, 2, 3 winners and maybe they will publish a leader board which is across whatever if there are 1000 runners, 2000 runners you will be given a linear leader board ok.

Now, this 100 days of running they brought in this concept of tiered rewarding. That tiered rewarding in some form is coming here. Tiered rewarding is, which age group do you belong to? The probability that you will do better in a marathon, although it is not for sure. There are older people who run better than youngsters, all that is there, but there are more exceptions rather than the rule. As a generic rule, youngsters will do better than older people and even their very young people middle age and older group. So, they classify in terms of 15 to 25, 25 to 35, 45 to 55 that level tiering they do and within that how is your performance.

Rather than saying that overall you are the winner or you are gotten 500th rank or 1000th rank or whatever it is, it helps to classify that is one way of classification and then they have multiple other ways of classification also by the city, by the running group. Some people could be amateurly doing it, like they are not professionally trained with this. They are actively professionally trained.

So, there are multiple subcategories. If you see in this, this is the previous quiz. The previous quiz announced 1, 2, 3 winners, right. This one said in the diamond tier, so and so is the winner. In the gold tier, so and so is the winner. It was able to spot the speed of performance and accuracy of performance and automatically classify. The logic that it was using to infer is not known, but there is some logic to categorize, which is very essential because in any classroom, any subject learning, we are all not the same.

In some areas, some of us are really having an affinity we are in touch with the subject and the field, in some other areas we have to be bucketed. In a different category unfortunately the grading and the assessment system is one size fits all. But a better thing



would be to understand which learner which category the learner falls into. So coming back to this 100 days of running analogy, you know what they considered as winner at one point of time they keep tweaking the, the idea is to run 100, for 100 days every single day and the run can mean even a walk.

Run is not necessarily high speed running, run can mean a run, jog or a walk. You have to walk and that too you need to walk minimum 2 kilometers a day. That is all you need to do. You need not walk long. You can, but the basic minimum needed is 2 kilometers, which is about 20 minutes or 20 to 30 minutes at the max.

Now, how regularly you are doing is what also determines the mastery. So, if you have done it for 80 plus days out of 100, I think here also they have given the mastery as 80%, right? Then you get a gold medal. And I believe it is some 60 65 and above you get silver or something and 40 plus and above they get a medal. Because doing 40 days out of 100 days as a discipline you are rewarding for the discipline part rather than doing a streak running for few days with high kilometers of walk or run. The daily discipline of doing for 40 days gets rewarded and it also gets classified and tiered under different categories like age group, city, geography, professional, non-professional because all that has a bearing on the performance. So, in learning also if we are able to bring in those categories, this game is trying to bring it in some form.

It is not as, it may probably add in elements in the future, but this is another kind of thing that we need to be aware of. Now let us go into actually creating this game itself. So all of you need to sign up for the account and login. What I am using is something called a super account which has many of these features. But many of you when you sign in you will find the basic features although you can see the super features you cannot actually use them.

But there is a way to get a trial super pack which we will share. You go and click on create quiz you can create from scratch there are multiple ways. You can create from scratch. You can generate from text, basically AI based quiz generation. You can upload a document.

If you have a PDF version of a document, you can convert that into a quiz. You can convert a URL like a YouTube video or a Wikipedia page or anything like that into a quiz. So, let us do the from the scratch and later the other modes you can experiment. So these are the different types of questions.

Most of you saw during your quiz, you saw multiple choice. Multiple choice is straightforward. Fill in the blank again is straightforward. Reorder is used in what kind of

questions? Can you give an example of a reorder? pH there was a question right in terms of acidity and alkalinity, what is the ordering? So, that is an example. Match. Yeah, there are several matching kind of questions possible.

So, pattern matching, drag and drop is clear, drop down again you are all familiar with. So there is a specific option which was not used in this game but it is used for maths, it is maths response. For example if you have to ask a question like algebraic equation, that feature comes in handy. Labeling, I am sure all of you had an opportunity, very useful in any kind of diagram, specifically biology but not restricted to that, can be geography, maps, maps marking and every subject has diagram, so it is going to come in handy. Hot spot, so ability to locate in a diagram the exact point right, usually we remember the questions that we used to get in school days, mark this position in a diagram right, where is it located kind of a thing.

So, here an illustration is given in terms of where the atrium is. And graph plotting, this again specifically MAC specific. Categorize is obvious right when very simple illustration is given all subjects have categories and comprehension question is something that you saw we can give a case study and related to the case study you can ask simple questions. And there are a few other questions which come in handy in some cases. Sometimes it is not very convenient to use the draw kind of feature but there are people who use it if it is an approximate drawing you can certainly do.

Open ended is something that you saw just to assess the conceptual knowledge. There are questions like video and audio response, may be very short video and audio responses of questions. These would involve actually storing files and replaying them that could be the slightly tedious part but there are used cases where these come in handy. Poll is something that you saw. Word cloud again you indicated your preferences in terms of which subject you like the most and slide is something just presenting the matter. So these are all the questions that are available and once you pick and choose the question you just save them and you publish.

Publish the quiz once it is ready. Now your quiz question quizzes get stored in my library and then you need to go to the quiz and either assign it as a homework, you can choose the different options how many times a participant can attempt. If it is homework it is unlimited meaning at least a couple of times they will want to try and practice it and whether you want to give it with a deadline or go without any deadline and then it will create a link that you can make use of. The other option is live quiz that we played.

Here again in live quiz you do a start a live quiz. There are two options here. Again a classic option students answer at their own pace which is what we tried. The other option

which we did not try is but which is available is instructor led that everybody progresses for every question at the same pace. Both have applications. So, if we do not want to make it competitive, but give everybody equal time then you make it a instructor led question. And so, this is what quizizz is all about and then you can find the reports in the report section, how many participants, what is the accuracy and here you can download a spreadsheet the report that we saw, remember how many answers, who answered, what question, etcetera, the complete matrix can be downloaded here.

So, this is as far as the features of the quizzes tool is concerned. Some others you can explore on your own, but this is the basic set of features that the tool has to offer. Any questions? Yeah, so essentially you go to create, quiz, create from scratch and let us say you click on multiple choice, you enter your question here, you enter the answers here and then save the question and then move on to the next question. We saw a set of different questions right, for each question you came like that. There is another easy way to do it, but that is restricted to only certain question varieties, which is basically to import questions from a spreadsheet. Now, there is a spreadsheet template sample that is given by quizzes, remember I told you when quizzes started, they started only with some 4 or 5 kind of questions, they allow only for those kind of questions.

Fill in the blank, open ended, poll and draw. So these are the only questions for which they use a template, excel template based upload. The remaining questions like reorder, match the following and drag and drop and many others that you saw will have to be manually keyed in. Earlier this used to be a more convenient way of loading, but now with more varieties available and I think they have started supporting also Google forms recently.

Google forms all of you know. You just need to link and upload. Once again here it is limited to the smaller set of question varieties. The more advanced ones are available only in the main form of creating content. So would you like to explore the tool now?