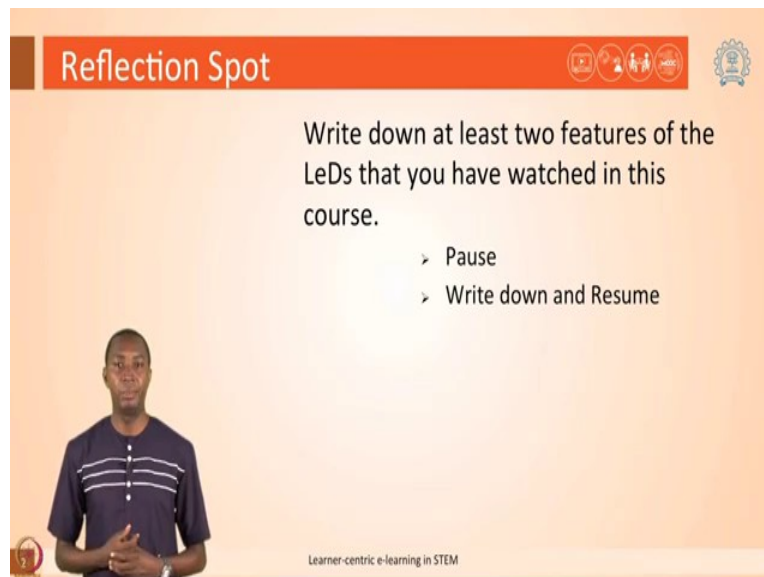**Designing learner-centric e-learning in STEM disciplines**
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Lecture - 26
Segmenting and Personalization Principles

So, the first 3 weeks we have gone through different activities, different learning dialogues that we have been able to learn different concepts. And of course, in the first and the previous learning dialogues we have learned about the divinity multimedia principles that we use when you are creating a learning content or engaging content for students.

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Now, this is a friction spot. Let down at least two features of each of learning dialogues that you have seen and then once you are done resume the video and proceed with the next session.

So, many of you might have come up with different features of the learning dialogues they have seen. So, some of you might have said that ok, there leaning dialogues were consisting of only one concept that was discussed at length. And some of you might have said that the learning dialogues were shorter probably some had 6 minutes or some 8 say minutes or 10 minutes. And some of you might have said that ok, the learning dialogues had a lot of in video activities such as questions or post coins where you need to think and effect.

And some might have say that these learning dialogues had a lot of explanations that were fail is it for us to understand and to follow, so the lesson became much more easier. Now, this brings to discussion about another principle that is called the segmenting principle which is of importance as well when you are creating e-learning content, ok.
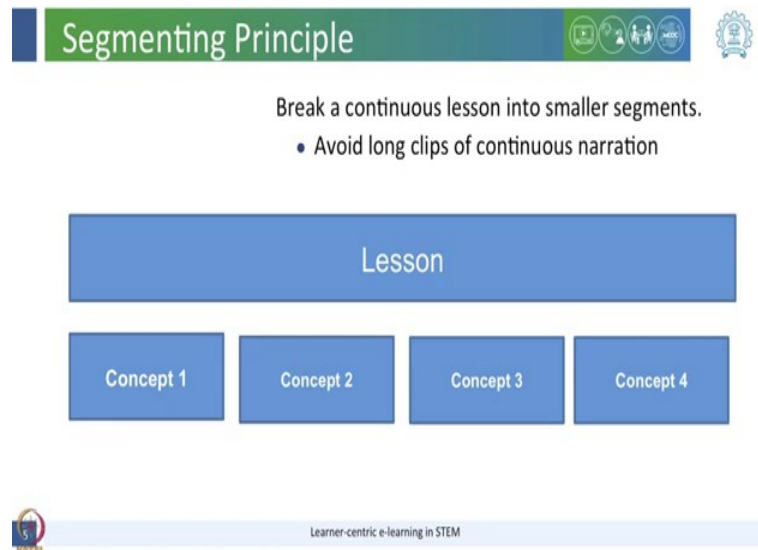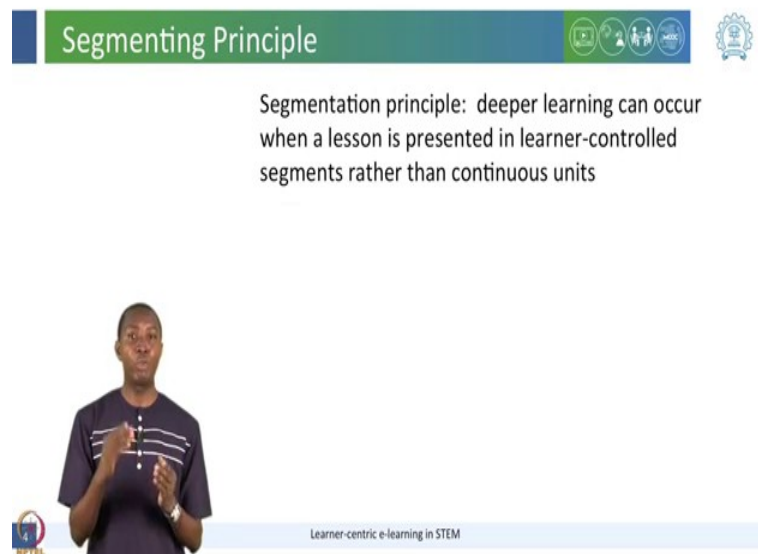
Now, imagine you have a lesson like what you see here, a long lesson maybe a 1 hour lesson or it a may be an a 60 minute lesson. Now, you present the citizen to your students of 1 year in a class or 1 year in an underlining format. What do you think will happen to your students? Just take a moment and think of the cases when you present a long lesson to your students and think of the actions that your students do when they are following up your lesson.

So, it could be that when your students are falling up your long lesson, they could be probably some of them are becoming sleepy or some of them could probably they could be overloaded with some of the concepts that are falling up because you are presenting it in a long probably in a format that is not easy to understand for them. And some of them could be could not be following because a probably the concepts that are in the list of themselves are not work explained because you have complete each and everything in 1 unit.

So, what we do in segmenting principles is that you need to break a long lesson or continuous lesson into smaller segments that are much more easier for your students to learn. So, break your long the unit or long lesson into a smaller smaller chunks into a way in such a way that your students can be able to also. Look into a diagram here. We have a lesson that is long in nature. So, you can see how it is.

Then, we are breaking it into a smaller pieces like concept number 1, then concept number 2, concept number 3 and concept number 4 which implies therefore, that the student will be able to follow us on much more easily because you are explaining each and everything that is required to be understood on that particular unit or that particular small a piece. That is what you call a segmenting principle.

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Segmenting principle states that you need to break your continuous lesson or you need to into small small chunks that becomes easier for your students to be able to learn. And of course, breaking or chunking into a smaller pieces depends on many factors, in that we will be looking into like where do you think there is one could be much more easier to understand probably things like which lesson would start first before the other lesson or which unit would come first or which concept would come first before the next session.

So, but all in all what you need to understand is that whenever you have a long lesson or you are developing your lesson remember to break it into smaller smaller pieces and between each pieces remember to include control buttons such as continue button that will allow your student people to navigate from one point to the other or from one unit that she or he has finished leading into the next unit. Breaking there is, so into smaller pieces or smaller units or small chunks has advantages as well. First of all it allows the learner to be able to follow the process or to fall the

units much more easier. So, they can be able to learn at the own speed and be able to ingest or they just the information that is coming from the unit much more easily because it is much more simply made and easy to understand.

But again it helps it becomes a method for them to be able to understand the units because it offers each unit has a different a different lesson or a different topic that is covered in that particular unit. So, breaking into smaller pieces allows your student people to learn at his own pace, but understanding the content or the concept much more easier compared to when the unit was presented in a long form or long lesson.

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So, now let us look onto this example. This is an example from physics which explains about the formation of lightning, so lighting information. So, if you see this picture image here, you could be able to see that you have houses, you have clouds, we have charges, positive or negative charges being formed and there and then you are giving your students to be able to make sense of the image that is presented.

So, in this image what you see here is actually the teachers, actually trying to explain about the formation of lightning where his touches a probably he shows how positive charges are being form formed in the clouds and then the negative charges coming up, a cloud down the cloud positive charges going up. And then how a stepladder moves from the ground all the way to up

and how a negative charge moves from the cloud coming down to the lower part. And again at the same time showing how the lightning is actually being formed. But all this information is actually presented in only one image as you can see and this becomes a big a problem because students cannot be able to understand all the concepts that are happening in this particular image that you can see.

So, the best way to be able to solve such a problem and allow your students to be able to learn better is that you need to break this particular unit, this particular topic into smaller smaller chunks or smaller smaller blocks that will allow your students be able to learn better and this is how it can be done.

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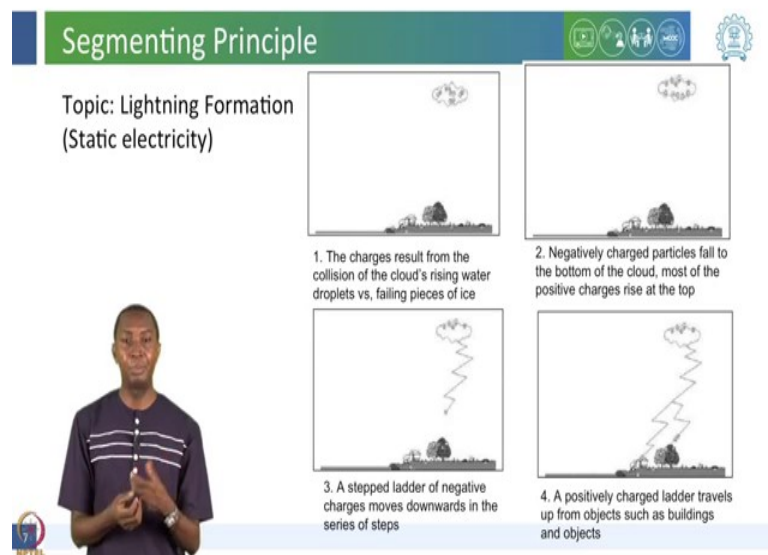
So, now look into the next image here, which shows the different stages at which lightning can be can occur. Then this image here shows the different block diagrams the different parts of how the previous image has been broken into smaller smaller pieces that allows the learner to be able to show the information about understanding information much more easier and then to be able to explain the process with ease.

So, from this diagram you can be able to see that the diagram is divided into a smaller smaller units. So, this first unit could be explaining about the formation of charges. The second unit could be oh explaining about how positive a negative charges actually being moving to the top

and to the bottom of the cloud. In the third unit could be explaining about how the formation of the negative charges on the ground makes sense. And the fourth part could be explaining about how the learner is being formed from the ground up to the crowd to make sense to connect.
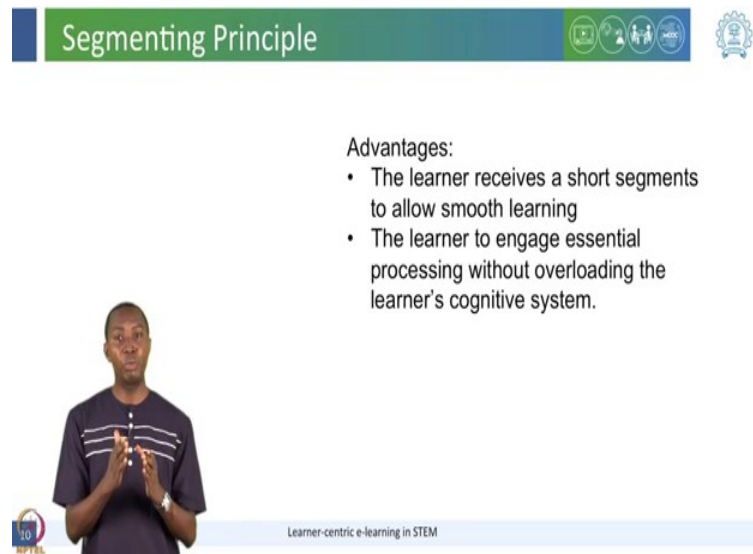
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On the next graphics that we see here, it is actually a continuation of the same process explaining about the formation of lightning. So, once you know that the stepladder is moving up then there is another ladder that comes from the cloud all the way down. So, the meeting point where this stepped ladder from the ground or from pointed objects such as houses and buildings meet is the point where this particular light in your occurs. And of course, as students or as learners was people we see only the brightening light, brightening light that is happening when that lighting occurs.

There are of course, advantages to using segmenting your lessons. First of all the learners should creeps of information or maybe probably 10 minutes or 5 minutes or 2 minutes depending on the reason itself which makes which helps the learner to be able to learn at a pace that he can be able to learn.

And of course, it allows him or her to ever connect the concepts from each smaller unit to the next unit with ease. And remember when you are creating such content you have to include always a continue button that allows the learner to be able not get from the first unit that has been chunked to the next unit.

Then again segmenting principal hours the learner to engage essential processing without overloading the learners cognitive systems. So, your cognitive system will work better because each piece is presented in with its information and it the next piece is also presented with its information, but at the same time they are also control buttons that allows you to be able to move from this particular first piece of information to the next piece of information. And this actually enhances your process of learning in the process.

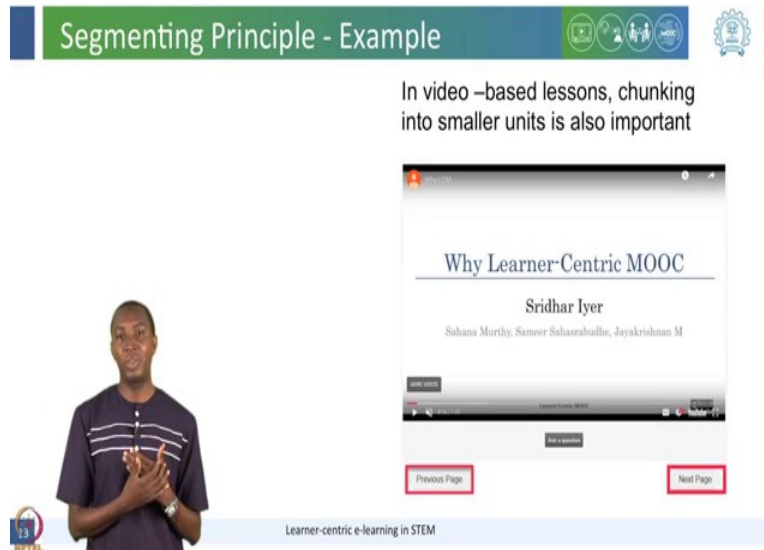(Refer Slide Time: 08:29)

Now, remember that when you are creating this contents you are segmenting your unit or your lesson into pieces what you have to remember is that always remember to provide control buttons and these buttons could be like a continue button that allows the student to be able to move from the first piece of information to the next piece of information. But again, while she continues or it continues to the next time next a piece of information remember to put they buttons like back button or next button that allows the student to be able to move or to progress to the next units or to be previous unit trying to connect the points in between the units, but again trying to connects their knowledge or the concepts that have been taught in the previous unit to the next unit.
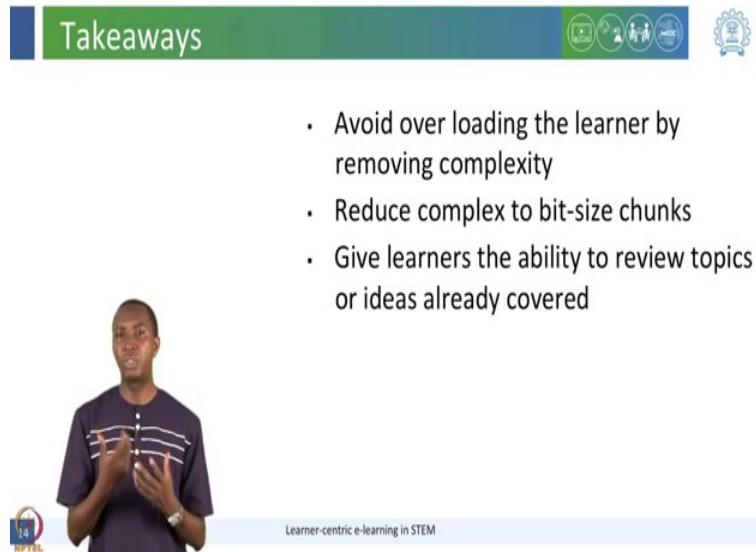
So, in cases when you are using video lectures or videos in your content, so you are developing e-learning content that is video based. So, in this cases also you also need to chunk your videos. Do not provide a long video like 20 minute video or 50 minute video or 1 hour video. The longer the video, the longer the unit becomes it becomes an overall to a working memory and therefore, students do not lead more or fall up the lessons that are longer. And this is this has been proven by the set.

Longer videos actually preventing us from following up what is being taught and therefore, whenever you are creating such lessons in terms of video remember to provide also control buttons. Make them shorter, but again control buttons such as previous page, the next page, that allows the learner to be put navigate or move to the next piece of a video that allows the process of learning go as it is requires.

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So, as takeaways from this principle or segmenting, segmenting principle, always try to avoid complexity by breaking your lessons into smaller pieces that are manageable by your students and that can be able to know your students to be able to learn better. But again whenever you are breaking your pieces you make sure that you are able to connect the points. So, reduce the complexity by making sure that each the pieces are connected to each other.

The first concept should be able connect the next concept, next concept to be able to connect the next concept, but in between the concepts make sure that you are putting a continue button. Lastly, give you a learners the ability to be able to review a topic, the ideas they have covered, so that they can be able to see or make sense of the materials that has been presented in terms of bit sized chunks of smaller smaller pieces. Let us now discuss another important principle in multimedia learning.

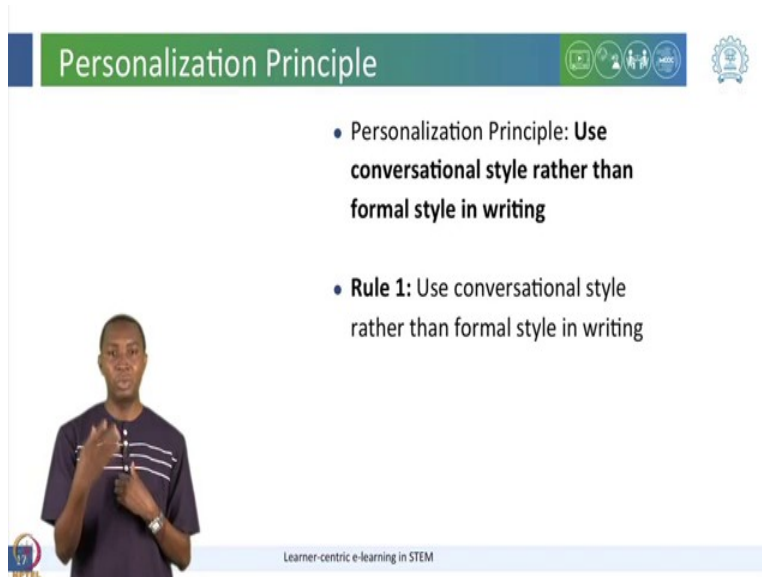I will start by giving an example. So, suppose you are creating an e-learning course a content for your students, and this is a an e-learning course of which you need to give introduction to your students. And you start with the following introduction. Take some moment to think what could be the impact of this lesson. So, based on the previous text that we have seen, you could be able to see that a lot of information has been directed to the student. It looks like it is more of putting activities to your students than putting of a conversation.

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Now, the first rule of personalization is states that use always conversation style of lighting than the formal state of lighting. If you want to replace this text that you have seen here you could be able to remove or they too soft in your content in such a way that you include the first and second the pronouns, such as I, we, me, you, your, so that it becomes much more of a composition between you as the teacher and the student himself. If we want to change this the previous fashion to the personalized fashion, this could start something like this.

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So, if you look into this passage that is happening here, it you could be able to say that there is some sort of human, human conversation that is happening between the lane and the content.

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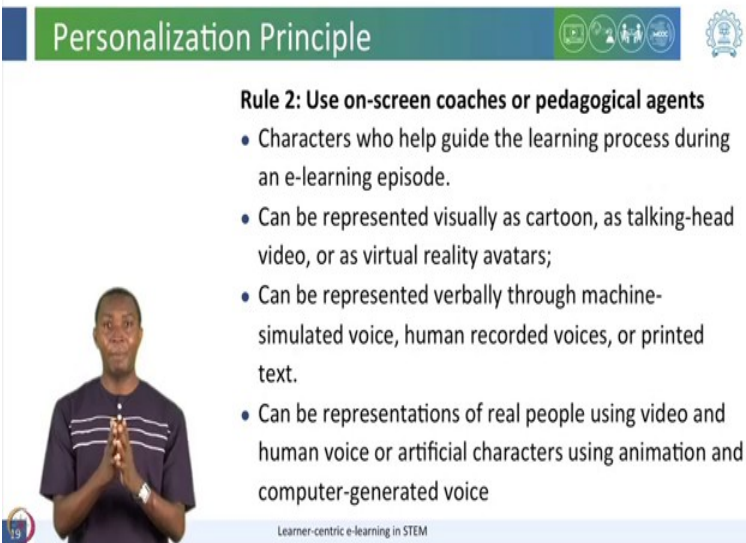Now, look into the following image here. This is an image that comes whenever you are navigating into one of the e-learning courses that has been prepared by one of the teachers. Now, the page itself looks like you have an a human like image on the left part and then you have text

on the line that introduces you to the cause of the content itself. So, it says like, hi, I am Mary and welcome to this class. Today I will teach you about so and so and so. And therefore, you will be able to learn in so and so and so, which implies them for that this particular type of learning gives you a feel like you are talking to a normal human being and this motivates you to keep you to keep learning.

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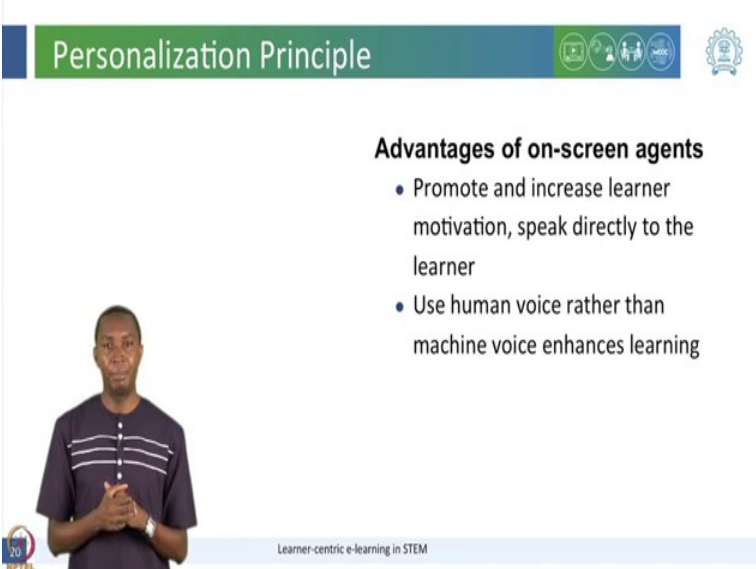Therefore, this principle is called used on screen agents or pedagogical agents to be able to help the learners be able to connect which the content much more easier. You may be thinking about what are these pedagogical agents or what are these on screen coaches. These are actually agents that can be presented like a tool or that can be presented like virtual reality avatars. They are human like or machine like or printed text in the form of printed text that allows composition between the learner and the content, the leaner towards the content when they are actually learning.

So, these agents can be represented, representation of little people or it could be the face of a real person that is actually happening on being shown on the content or it would be something like an artificial character that has been embedded because or it could be some computer generated voice that allows the learner to be able to move forward in a process that is one of human conversation than a process that is actually a formal of present information.

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And these use of pedagogical agents has advantages as well. First of all it promotes and increases the learner motivation because the learner becomes phase like I belong to this particular lesson and I am talking to a person. And then again using these pedagogical agents, there is human voice that is coming up, there is human text that is coming up that is actually informal that brings some sort of informal conversation and this again enhances the learning process of their students. So, in the cases that we are using these on screen agents or pedagogical agents remember to use indirect speeches and polite speeches then when we use direct statements.

Instead of using the word place the next key, you would probably say let us now place the next key. So, there is a sense of indirect speech that is happening, but a polite way of connected connecting to your students. Or for example, again another example could be you want to tell your students now is time now to find a denominator. You want to, you tell your students like find the denominator. Instead of using this statement this direct statement you would have softened it by saying probably, it is a time for you now to find the denominator of a number.

Or, suppose you want to give you say like please click the pause button, instead of using this statement we could is the say if you are done you might want to click the pause button to be able to, to think on the content. So, such statements polite statements and indirect statements are the ones that are encouraged to use when you are creating these contents. And therefore, rule number 3 of personalization principle says that always use indirect speech and polite speech then when you can use the direct speech.

So, as they cover is now from this particular principle, the principle personalization, we could be able to say that. So, always when you are creating contents always keep the things simple by presenting the basic information in your conversation, in your content. So, make everything as possible as conversational as possible. Allow the learner to be able to have attached a human to compute a touch that can make him or her feel like he is in the learning process and then always make the author or the teacher visible.

So, this whenever you are making these on a screen edges available all pedagogical agents available, it this enhances the sense of leaning and therefore, the learner himself it becomes motivated to be able to learn next because he can be able to hear or fall up there is so much more easier. And finally, the instructions should not present information alone, but always it should be able to prime the learner to be able to think of the previous a knowledge that he or she has, so that she can be able to connect today. So, is what is happening the next sessions and this makes sense of learning and improves learning as well.

Thank you.