Introduction to Learning Analytics
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Lecture – 04
Types of Learning Analytics – II

In this learning dialogue, we will see the other two types of Learning Analytics that is predictive analytics and prescriptive analytics.

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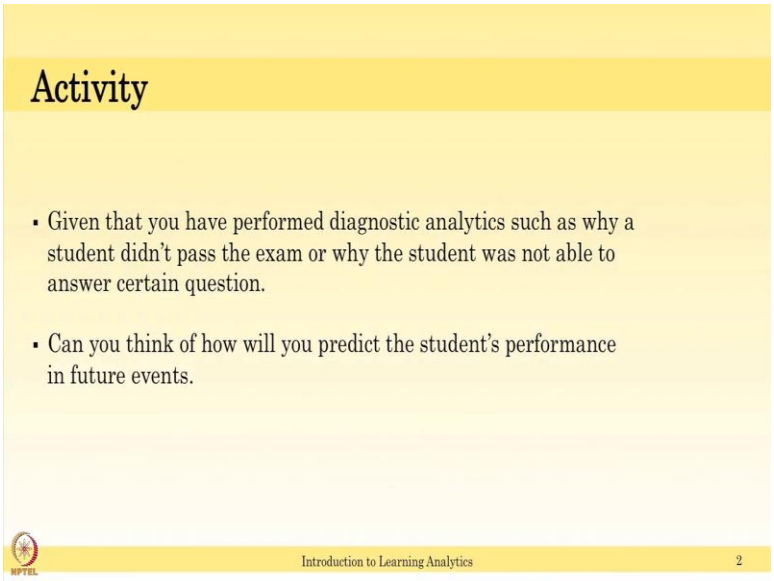

Given that you are performed diagnostic analytics such as why a student did not pass the exam or why the student was not able to answer a particular question. You found out that student did not pass the exam because he has not attended enough classes.

Given that you have a some diagnostic analytics like that. Can you think of how will you predict the student's performance in the future events? These diagnostic analytics was performed based on the past data. Can you think of how do he perform in a future semester which student will pass the exam? Which student will not able to answer a particular question? You can pause this video; write down your activity write down your answers. After you complete this activity, you can resume this video.

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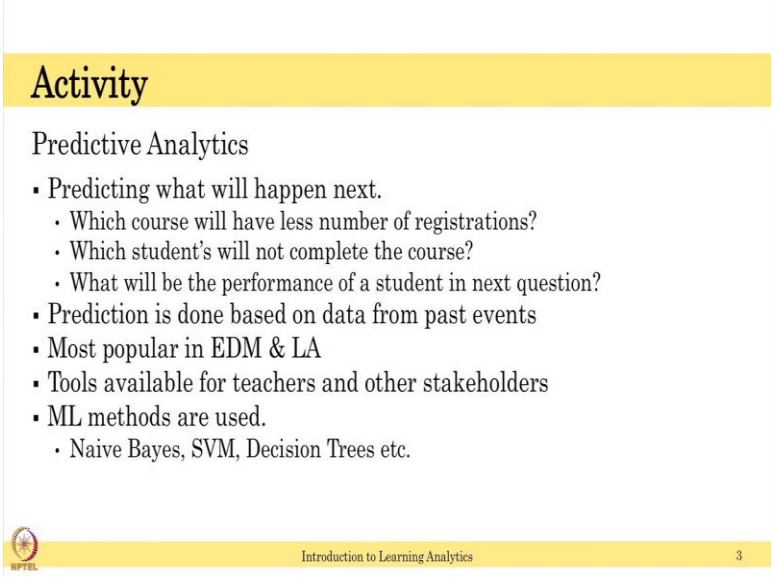

Predictive analytics, actually predicting what will happen next. So, that is like what course will be performed better or which course will have a less number of registrations in the university, which students will not complete the course, what will be the performance of student in a next question such a finer level to the higher level like a coarse grained. How do you do that? The prediction is done based on the data from the past events.

We collect the past events like how many students are registered to the particular course. In the last 3 years, can you predict it what will happen to next class? Yes, if the students or registering to the course say networking for last 3 years only 60 percent students are registering, then we can expect in next year also only 60 percent registers unless there is something event happens which makes the change.

So, we can predict what will happen in the next semester based on the last past data. It is very common in a data analytics. We will talk about predictive analytics in a week 4 of this lecture. So, the most popular predictive analytics or Naive Bayes or a very good classifier like SVM or decision trees. It is very common in a educational data mining also in a learning analytics community. There are lot of tools available for teachers and other stakeholders. The tools like weka, is open source for everyone and there are the good tools which is developed for the industries such a rapidminer orange.

These software tools are available for the academic purpose free of cost; however, we have to understand one thing, the latest buzz about deep learning or artificial intelligence or deep neural network or convolutional neural network; it is good to use those networks for the educational data. But you have to remember that in order to train those deep networks or CNN networks; we need have a loit of data. Usually in educational settings our data is fine grained, but not lot of data on a similar event.

So, we will stick to use naives Bayes SVM or decision tree in our fourth lecture we will lose one of these methods to predict the students' outcome in a learning environment.

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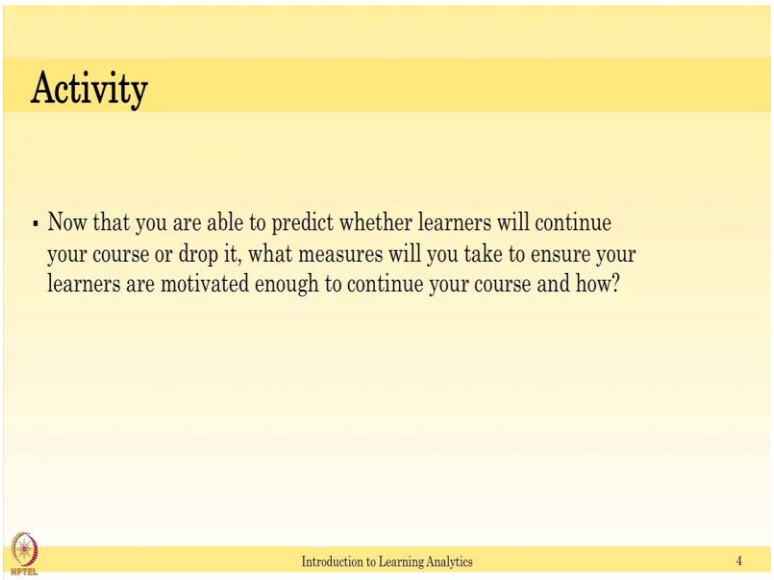

The next activity is that for the prescriptive analytics now that you are able to predict whether learner will continue the course or drop it right because you are able to predictive analytics. Consider that some learners who is going to drop your course, what measures will you take to ensure your learners are motivated enough to continue a course and how? Think about it. What measures will you take to ensure your learners to motivated enough to continue your course or not going to drop out?

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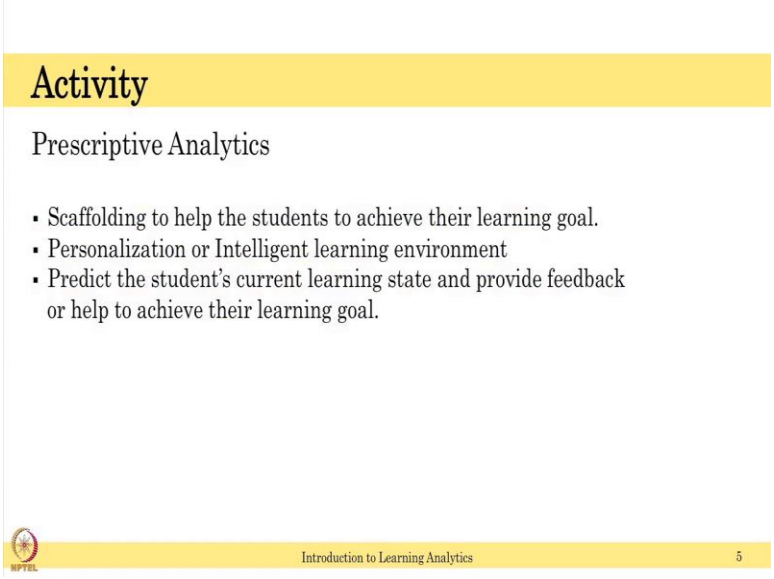

Prescriptive analytics can be scaffolding to help the students to achieve the learning goal scaffolding in the sense we can provide a hints feedback in the learning environment. For example, in your class if you find couple of students needs help; you can understand that these two students needs help and they they were not able to pass the example based on the midsem mark you can understand that.

What you will do? You can ask them to do more assignments, you can give them more problems or you can do a special coaching class to them. So, the students can clear the doubts by doing a lot of assignments or you can combine them with the peers in the class, they can interact and learn from others and they were able to complete the course. This classroom environment can be converted into intelligent learning environment using the data collected from student's behaviors to this interaction with the system this is called personalization or adaptation in the intelligent learning environment.

You can predict the student's current learning state and provide feedback or help to achieve the learning goal. The learning goal can be said by you or the students. Students sat their own learning goal you can help them to achieve their learning goal because student has to be motivated in order to complete the course.