Objectives Given-

* Using a Bayesian Network to predict the success of an E-Learning model
* Probability of conducting an online course and its Success.
* Analyze different types of learning styles in the e-learning platform.
* 3 to 4 learner and e-learning platform attributes

Learner Attributes-

Independent variable states

• Forum: posts messages; replies messages; reads messages; no participation.

• Chat: participates; listens; no participation.

• Mail: uses; does not use.

• Information access: in fits and starts; sequential.

• Reading material: concrete; abstract.

• Exam Revision (considered in relation to the time assigned to the exam): less

than 10 %; between 10 and 20 %; more than 20 %.

• Exam Delivery Time (considered in relation to the time assigned to the exam):

less than 50%; between 50 and 75 %; more than 75 %

• Exercises (in relation to the amount of exercises proposed): many (more than

75%); few (between 25 and 75 %); none.

• Answer changes (in relation to the number of questions or items in the exam):

many (more than 50%); few (between 20 and 50%); none.

• Access to Examples (in relation to the number of examples proposed): many

(more than 75%); few (between 25% and 75%); none

• Exam Results: high (more than 7 in a 1-10 scale); medium (between 4 and 7);

low (below 4).

A screenshot of a computer

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adaptive and personalized, since it has to be used by a wide variety of students with

different skills and learning styles.

Some education systems use tests to assess the students’ learning styles, which

consist of a number of questions and compute the sums and averages of all the

questionnaire answers problem with these tests is the time students spend

answering questions and the accuracy of the results obtained. If questionnaires are too

long, students tend to choose answers arbitrarily. The Bayesian networks (BNs) represent and

detect students’ learning styles in a Web-based education system. The nodes in the

BN represent the different variables that determine a given learning style. The arcs

represent the relationships between the learning style and the factors determining it.

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Different Learning Styles Dimensions- Leaning Style Can be Categorized by asking these Basic Questions.

* What type of information does the student preferably perceive: sensory

(external) – sights, sounds, physical sensations, or intuitive (internal) –

possibilities, insights, hunches?

* Through which sensory channel is external information most effectively

perceived: visual – pictures, diagrams, graphs, or auditory – words, sounds?

* With which organization of information is the student most comfortable:

inductive or deductive?

* How does the student prefer to process information: actively – through

engagement in physical activity or discussion, or reflectively – through

introspection?dx

* How does the student progress towards understanding: sequentially – in

continual steps, or globally – in large jumps, holistically?

Sensory-Perception

Intuitive-Perception

Visual- Input

Auditory- Input

Inductive- Organization

Deductive- Organization

Active- Processing

Reflective- Processing

Sequential- Understanding

Global- Understanding

Exam Based Evaluation using Bayesian network to determine the learner’s proficiency in subject and know whether the course should be introduced and the student’s performance as well.

Firstly a student logs in the system. Then he/she chooses from the available courses. A pre-evaluation test is performed which is used to determine the knowledge levels for each concepts.

Hence the response to each question is used to calculate the concept weights. This procedure gives us a certain idea about the initial knowledge level for each student. Each student will be having a definite knowledge level for each concept. Once we finish the initial evaluation, all the calculated concepts are categorized into three levels poor, good and excellent.

Parameters for The Bayesian Network Test—

* Guess
* Slip
* Knowledge Level
* Question difficulty level
* Guess and Slip parameter in the Bayesian network. Hence in case of a highly intelligent person performing a slippage, their knowledge level is reduced by a small percent. Also in case of a low intelligent person performing a guess, their knowledge level is increased by a small percent.

Learning Based System Parameters-

* LMS Login Frequency
* Time Spent on LMS
* browsing of an announcement from the university,
* starting an assignment of two compulsory subjects,
* submission of the assignment.