A Study on Educational Data Mining Through Questionnaire Survey

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Abstract: **Educational Data Mining (EDM) is a recent area yet with many fields to be researched. Applying Data Mining techniques to education data help us dealing with issues that would be hard without them. With its techniques and methods we try to discover behaviours and strategies, both for students and teachers. This information will take us towards the discovery of which strategies must be avoided, which teaching strategies can be adapted to each kind of student or to anticipate which students will fail so they can be helped since an early stage. In This Paper we have conducted a Questionnaire Survey on 500 Software Engineers to understand the present scenario of EDM.**

Keywords: **EDM, strategies & Questionnaire.**

INTRODUCTION

Educational Data Mining is an emerging discipline, concerned with developing methods for exploring the unique types of data that come from educational settings, and using those methods to better understand students, and the settings which they learn in.

Whether educational data is taken from students' use of interactive learning environments, computer-supported collaborative learning, or administrative data from schools and universities, it often has multiple levels of meaningful hierarchy, which often need to be determined by properties in the data itself, rather than in advance. Issues of time, sequence, and context also play important roles in the study of educational data.

Educational Data Mining focuses on developing new tools and algorithms for discovering data patterns. EDM develops methods and applies techniques from statistics, machine learning, and data mining to analyze data collected during teaching and learning. EDM tests learning theories and informs educational practice.

Educational data mining is emerging as a research area with a suite of computational and psychological methods and research approaches for understanding how students learn. New computer-supported interactive learning methods and tools—intelligent tutoring systems, simulations, games—have opened up opportunities to collect and analyze student data, to discover patterns and trends in those data, and to make new discoveries and test hypotheses about how students learn. Data collected from online learning systems can be aggregated over large numbers of students and can contain many variables that data mining algorithms can explore for model building.

GOALS OF EDM

1. Predicting students' future learning behavior by creating student models that incorporate such detailed information as students' knowledge, motivation, metacognition, and attitudes

2. Discovering or improving domain models that characterize the content to be learned and optimal instructional sequences

3. Studying the effects of different kinds of pedagogical support that can be provided by learning software

4. Advancing scientific knowledge about learning and learners through building computational models that incorporate models of the student, the domain, and the software's pedagogy.

RESULTS & ANALYSIS

Educational Data Mining is a promising discipline which has an imperative impact on predicting students' academic performance.
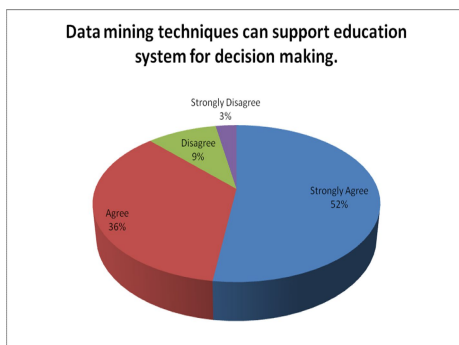
Strongly Agree	367
Agree	91
Disagree	29
Strongly Disagree	13
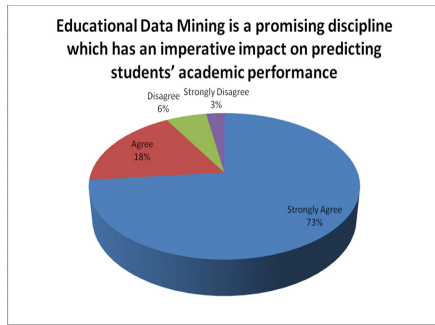
In the survey carried out for 500 random Engineers, 73 % of the population agrees that Educational Data Mining is a promising discipline which has an imperative impact on predicting students' academic performance,18 % of the population agrees to it and 6 % Disagrees whereas 3% of the population strongly disagrees.

**Data mining techniques can support education system for decision making.**

Strongly Agree	261
Agree	178
Disagree	47
Strongly Disagree	14

In the survey carried out for 500 random Engineers,52 % of the population strongly agree to Data mining techniques can support education system for decision making,36 % agree to it whereas 9 % disagree and 3 % of the population strongly disagree to it.

As the education sector blooms every year, graduates are facing stiff competitions to ensure their employability in the industry.
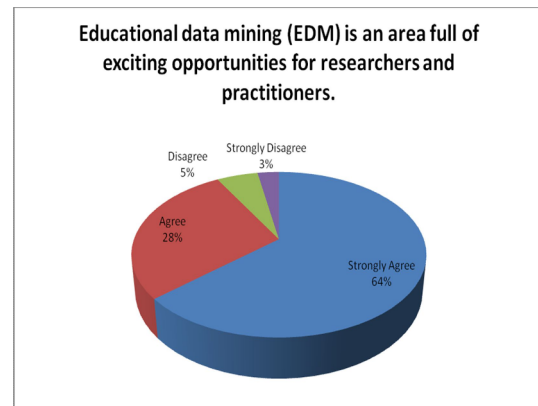
Strongly Agree	307
Agree	144
Disagree	41
Strongly Disagree	10
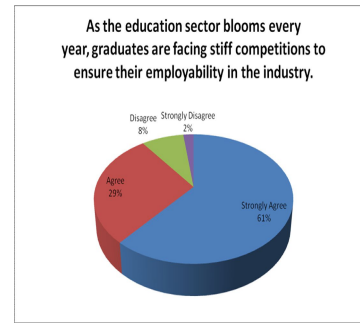
In the survey carried out for 500 random Engineers, 61 % strongly agree to As the education sector blooms every year, graduates are facing stiff competitions to ensure their employability in the industry, 29 % of the population agree to it ,whereas 8 % of the population disagree to it and 2 % strongly disagree.

Educational data mining (EDM) is an area full of exciting opportunities for researchers and practitioners.
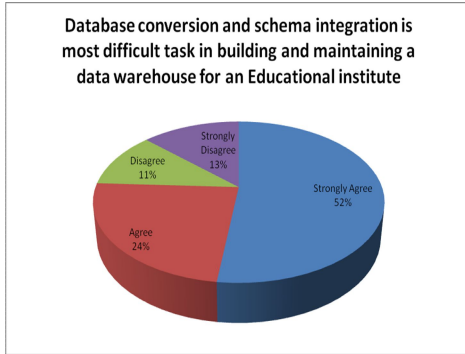
Strongly Agree	318
Agree	141
Disagree	27
Strongly Disagree	14

In the survey carried out for 500 random Engineers, 62 % of the population strongly agree that Educational data mining (EDM) is an area full of exciting opportunities for researchers and practitioners , 28 % of the population agree to it ,5 % of the population disagree to it and 3% strongly disagree to it.

Database conversion and schema integration is most difficult task in building and maintaining a data warehouse for an Educational institute
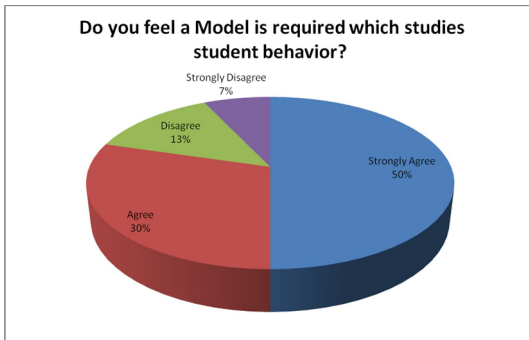
Strongly Agree	260
Agree	119
Disagree	56
Strongly Disagree	65

In the survey carried out for 500 random Engineers,52 % of the population strongly agree that Database conversion and schema integration is most difficult task in building and maintaining a data warehouse for an Educational institute , 24 % of the population agree to it,11 % of the population disagree to it and 13% of the population strongly disagree to it.
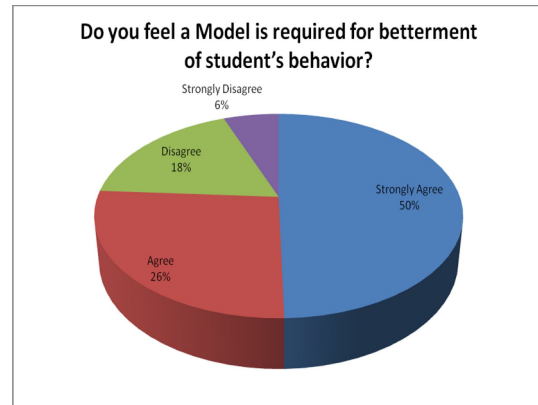
Do you feel a Model is required which studies student behavior?

Strongly Agree	250
Agree	148
Disagree	67
Strongly Disagree	35

In the survey carried out for 500 random Engineers, for the question, do you feel a Model is required which studies student behavior? 50 % of the population strongly agrees that a model is required , 30 % of the population agree to it ,13 % of the population disagree to it and 7% of the population strongly disagree to it.

Do you feel a Model is required for betterment of student's behavior?

|	
Strongly Agree	248
Agree	132
Disagree	91
Strongly Disagree	29

For the question asked, do you feel a Model is required for betterment of student's behavior?

50 % of the population strongly agrees that a model is required and 26 % agree to it, whereas 24 % of population feels that a model is not required.

Do you feel a Model Database of student's behavior should be there in University?
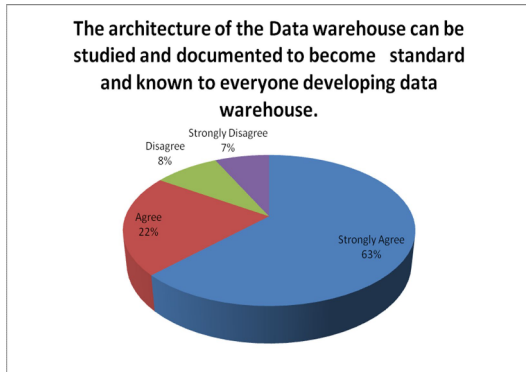
Strongly Agree	237
Agree	158
Disagree	60
Strongly Disagree	45
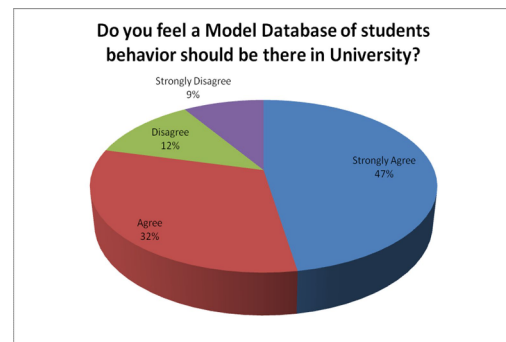
For the question posed as Do you feel a Model Database of student's behavior should be there in University? 79 % of the population agree that a database is required to trace behavior whereas 21 % of the population disagree to it.

The architecture of the Data warehouse can be studied and documented to become standard and known to everyone developing data warehouse.

Strongly Agree	313
Agree	108
Disagree	43
Strongly Disagree	36

The architecture of the Data warehouse can be studied and documented to become standard and known to everyone developing data warehou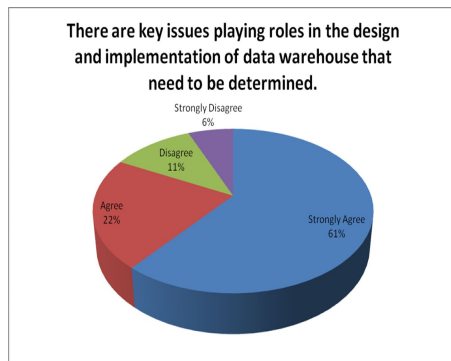se,63 % of the population strongly agree to it,22 % of population agrees to it whereas 15 % of the population disagree to it.

There are key issues playing roles in the design and implementation of data warehouse that need to be determined.

Strongly Agree	304
Agree	109
Disagree	56
Strongly Disagree	31

The architecture of the Data warehouse can be studied and documented to become standard and known to everyone developing data warehouse.83 % of the population agree to it and 17 % of the population disagree to it.

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