**LITERATURE SURVEY**

**1)** **A Review on Performance Prediction of Students Using Data Mining.**

**AUTHORS**: **Mandeep Kaur, Vimal Dev**

Predicting performance of students becomes extra challenging due to the huge volume of data in educational databases. The study on current prediction methods is still insufficient to detect the most appropriate methods for predicting the performance of students in Malaysian institutions. Due to the lack of studies on the factors affecting students’ accomplishments in specific courses within Malaysian context. The main objective of this article is to afford an outline on the data mining methods. This article concentration on how the prediction algorithm can be used to detect the most main attributes in a student’s data. We could really increase students’ accomplishment and success more efficiently in a well-organized way consuming educational data mining methods.

**2) Student Performance Analysis and Prediction in Classroom Learning: A Review of Educational Data Mining Studies**

**Authors:** **A .Khan, S. Ghosh**

Student performance modelling is one of the challenging and popular research topics in educational data mining (EDM). Multiple factors influence the performance in non-linear ways; thus making this field more attractive to the researchers. The widespread availability of educational datasets further catalase this interestingness, especially in online learning. Although several EDM surveys are available in the literature, we could find only a few specific surveys on student performance analysis and prediction. These specific surveys are limited in nature and primarily focus on studies that try to identify possible predictor or model student performance. However, the previous works do not address the temporal aspect of prediction. Moreover, we could not find any such specific survey which focuses only on classroom-based education. In this paper, we present a systematic review of EDM studies on student performance in classroom learning. It focuses on identifying the predictors, methods used for such identification, time and aim of prediction. It is significantly the first systematic survey of EDM studies that consider only classroom learning and focuses on the temporal aspect as well. This paper presents a review of 140 studies in this area. The meta-analysis indicates that the researchers achieve significant prediction efficiency during the tenure of the course. However, performance prediction before course commencement needs special attention.

**3) Predicting Pre-university Student's Mathematics Achievement**

**Authors: Chun-TeckLyeLik-NeoNgMohd DaudHassanWei-WeiGohCheck-YeeLawNoradzilahIsmail**

This study exploits three methods, namely the Back-propagation Neural Network (BPNN), Classification and Regression Tree (CART), and Generalized Regression Neural Network (GRNN) in predicting the student's mathematics achievement. The first part of this study utilizes enrolment data to predict the student's mid-semester evaluation result, whereas the latter part employs additional data to predict the student's final examination result. The predictive model's accuracy is evaluated using 10-fold cross-validation to identify the best model. The findings reveal that BPNN outperforms other models with an accuracy of 66.67% and 71.11% in predicting the mid-semester evaluation result and the final examination result respectively. A prediction model that is effective in identifying weak students and potential failures particularly in the initial phase, ahead of the final assessment provides opportunity for necessary remedial measures. The model can operates as an alert system in detecting at risk students and it is essential in improving and sustaining the students’ achievement throughout their studies to reduce the dropout rates in universities. In addition, the model can work as an advisory reference for teachers/lecturers in preparing the course teaching and learning materials, it can be the alternative for placement examinations as well. All these applications not only support the education institutes in delivering a better quality education and producing excellence students, but also beneficial to the administrative tasks of the institutes. Motivated by these reasons, there have been numerous studies done in constructing predictive models in education for various purposes.

**4) Scrutinizing Systematic Literature Review Process in Software Engineering**

**Authors: Zlatko Stapić, Luis de-Marcos, Vjeran Strahonja, Antonio García-Cabot, Eva García López**

Performing the Systematic Literature Review (SLR) in the turbulent field of Software Engineering (SE) brings different obstacles and uncertainties. The commonly used guidelines for performing the SLR in this field are adapted from health sciences and presented by Kitchenham and Charters in 2007. This paper follows the Kitchenham’s three-phases-review-process and fulfils it with the findings, observations and recommendations from other influential authors in the field. The process of SLR is observed from the perspective of appliance in the field of SE and supplemented by the important precautious measures that should be undertaken by the authors performing it. Thus, this paper aims to present the state-of-the-art in performing the SLR in SE. A systematic literature review is trustworthy, rigorous and replicable methodology that is used to evaluate and interpret all reported research relevant to any phenomenon of interest. The origins of systematic review can be traced back from the beginning of the 20th century, but during the 1980’s, systematic research synthesis and meta-analysis reach an especially distinctive methodological status in the domain of health sciences. During this period, and as a result of performing similar methods in other different fields, different synonyms of this method have been used in the literature.

**5) Comparison of classification techniques for predicting the performance of students academic environment**

**Authors: M Mayilvaganan, D Kalpanadevi**

The aim of this study is to compares some classification techniques used to predict the performance of student. It is helps to analyse the slow leaner in the semester exams that are likely study in poor which are used to improve their skill as early to achieve the goal in end semester. The task can be processed based on the several attributes to predict the performance of the student activity respectively. In this research, the paper have been focused the improvement of Prediction/ classification techniques which are used to analyse the skill expertise based on their academic performance by the scope of knowledge. Also the paper shows the comparative performance of C4.5 algorithm, AODE, Naïve Bayesian classifier algorithm, Multi Label K-Nearest Neighbor algorithm to find the well suited accuracy of classification algorithm and decision tree algorithm to analysis the performance of the students which can be experimented in Weka tool