

## A Comparative study on Supervised Machine Learning algorithms for Diagnosing Learning Difficulties in School going children.

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### Abstract

Dyslexia is a medical disorder due to which children have difficulties in learning and Reproducing the learnt concepts. In this context the children are mostly considered to be not interested or negligent towards their studies. So there is a need to diagnose, the difficulties faced by the students and analyse the area of their difficulties to train them. Learning Disability (LD) can be classified based on the difficulty in a typical manner, usually caused by an unknown factor or factors. LD affects about 15% of children enrolled in schools. The prediction of learning disability is a complicated task since the identification of LD from diverse features or signs is a complicated problem. The problems of children with specific learning disabilities have been a cause of concern to parents and teachers for some time. Its challenging for the teachers and educationalists to differentiate students with LD and other students. Various machine learning algorithms help in diagnosing LD. In this paper, a comparative study on Supervised machine learning methods which are well known artificial intelligence techniques like Naive Bayes Classifier, Support Vector Machine, Decision tree, it is made, based on the 16 signs and symptoms for diagnosis in various learning difficulties.

**Index Terms - Supervised Machine Learning, Learning Disability, Naive Bayes Classifier, Support vector machine and Decision tree.**

### I Introduction

Supervised machine Learning algorithms searches for patterns within the value labels assigned to data points. Unlike unsupervised organize the data into a group of clusters to describe its structure and make complex data look simple and organized for analysis.

When a LD is suspected based on parent and/or teacher observations, a formal evaluation of the child is necessary. A parent can request this evaluation, or the school might advise it. Parental consent is needed before a child can be tested [16]. Many types of assessment tests are available. Child's age and the type of problem determines the tests that child needs. Just as there are many different types of LDs, there are a variety of tests that may be done to pinpoint the problem.

To analysis or preprocess the learning disabilities in children's must required data collection and data sets has different checklists containing general signs and symptoms or attributes related to LD are