

**Exploring Determinants of Special Students' Performance: An Extraction Method Approach**  
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**ABSTRACT**

Today the existing challenge in higher education is to make students proficiently. Data mining is one of the best to education rising technique for prediction. It is the way intended to sustain the accurate necessitate of disability students in the education system. Education is the most important area undergone the influence of innovations in digital revolution. In mining, association rule is the popular approach to set up the association among items. Other than academic variables, huge number of factors plays the important role in prediction. The performance of disability student becomes a serious problem in educational databases. This research paper aims to determine factors that affect the improvement of disability student towards their education. The proposed model analyzes the affected factor that includes demographic data, psychological characteristics to mine all feasible information. The paper concludes the factors with uppermost influence on the performance.

**KEYWORDS:** *Data mining, factors, digital revolution, prediction.*

**I. INTRODUCTION**

Current trend in data mining, huge data is collected in learning databases remains without utilization. To obtain necessary profit from large data, dominant techniques are essential. Data mining approach were extremely used efficient in learning system to analyze the factors to predictable for student performance. In recent times, researchers focus in educational mining. This mining approach in education techniques intended for routinely extracting data interrelated to disability student learning behavior. It is the emerging technique to predict the disability students' future performance. The essential technique needed to measure suitable factors for prediction. Association is the best mining techniques to disclose unknown patterns. An outline is revealed based on association between items. In that, factor that affects the disability student achievement seeks out the improvement of disabled student.

To overcome the above disadvantages in affected factors, suggest the solution using by ICT and AT educators. ICT improve the disabled student knowledge by training skills. It also the potential of assistive tools improves the lives and eliminates the difficulty factor of disabled students. ICT used for the student with multiple disabilities and correspond more effortless to use the technology for the improvement of education.

**II. LITERATURE REVIEW**

Zachariah Kariuki Mbugua et al. [1] presents the research paper contributing to the presentation factors in maths and shows the imminent approach into rising issues on improvement on strategy formulation. Alaa El-Halees et al. [2] presents study of knowledge activities and apply the mining approach to explain the performance of learners. Raed Shatnawi et al. [3] propose a elegant structure using the rule mining technique and helps the student by signifying the course that gather their requirements for the development of intellectual performance. Luan Bekteshi et al. [4] describes the troubles encountered with physical disabilities to focus the studies and attracts the obstacle in the institution of higher education environment. Manpreet Kaur et al. [5] present the algorithm useful to observe the activities of customer and assists in growing the sales. Rufus Olanreqaju Adebisi et al. [6] conclude the potential use of AT to improve their lives and reduce the difficulties of learning for disabled students. Jessica McBroom et al. [7] shows a window rule mining in approach of student to fulfill the tasks assigned for the students. Athanasios S. Drigas et al. [8] presents the technology system for the recommendations to improved mathematics presentation. Lawal O.W et al. [9] shows that there is no important dissimilar among the students with disabilities educational presentation in instruction and knowledge of mathematics. Ye Chen et al. [10] presents the probable modeling in helping as an systematic instrument for teachers to discover and evaluate students' thoughtful. Faihan Alotaibi et al. [11] shows the use of

instructors to gather essential information guarantee the amount of barriers are eliminated and proved the valuable in enlightening the autism students.

### III. METHODOLOGY

#### A. *Objective of the study*

In this research paper proposed to discover the appropriate factors contributing to the reduced performance and to establish the strategies that adopt and improve the performance. Many factors that effect on students' accomplishment and this proposed work aims to learn the main factors that affect result on the performance of student achievement. The research work is separated into two parts work; one is correlated to identify factors that affect the improvement of disabled student. The second part related to finding out predictors improvement of disability student. From the Figure 1 it shows the framework to identify the factors that affect the performance of disabled students.

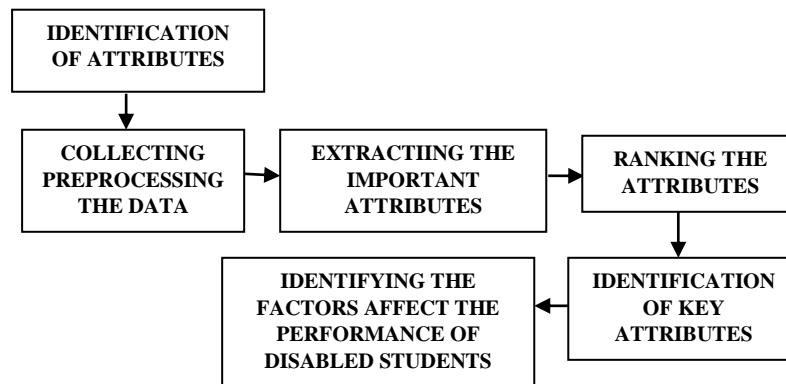


Figure 1: Framework to identify the factors affects the Performance of disabled students

#### B. *Collection of data and identifying the attributes*

The data from the disability student background collected together in the outline of questionnaires and interview methods. Before collecting the data, the related attributes are identified for the disabled student. These attributes are formed by using the factors that affect the performance of disabled student. The disabled student data used to recognize the behavior of performance improvement to the educational need and it contains 46 variables with 978 instances. The disabled students with low ability percentage are comes under the method of questionnaires for data collection. The students having high percentage of ability needs the way of interview method for data collection.

#### C. *Preprocessing the data and extracting the attributes*

To develop efficient content to the preprocess steps involved in the database to remove the unwanted data that includes irrelevant information. Preprocessing technique used to progress the value of data to get some important major attributes. Based on the collection of attributes relevant to the factors of disabled student, extracts the attributes using feature extraction technique. The strongly affected factors filtered using the filtering technique. The top most factors extracted to assess the educational performance for the disabled student. To analyze the effects of independent factor influencing the performance score for disabled students. It indicates which variables are important to identify the improvement of education to the disabled student.

#### D. *Factors affect the performance of disabled students*

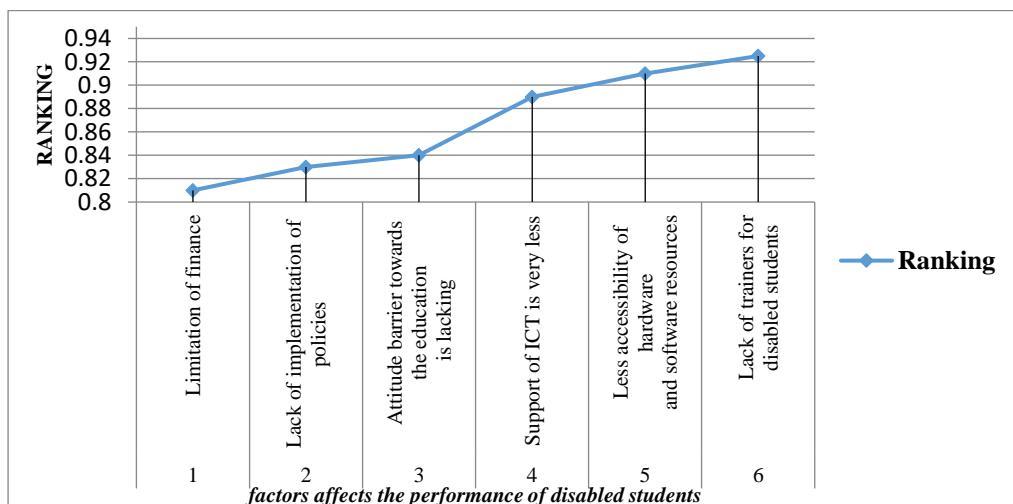
The challenge of using the technology for disabled student is identified by the extraction of factors. The most frequent factors are lack of trainers for disabled students, less accessibility of hardware and software resources, support of ICT with AT is very less, and attitude barrier towards the education is lacking for the special student, lack of implementation of policies and limitation of finance. From the Table1, shows the ranking for the factors affects the performance of disabled students.

**Table 1: Ranking the factors influence the performance of disabled students**

SNO.	Factors affects the Performance of disabled students	Ranking
1	Limitation of finance	0.81
2	Lack of implementation of policies	0.83
3	Attitude barrier towards the education is lacking	0.84
4	Support of ICT with AT is very less	0.89
5	Less accessibility of hardware and software resources	0.91
6	Lack of trainers for disabled students	0.925

#### IV. RESULTS AND DISCUSSION

To the knowledge this study explored the barriers encountered by disability students. The study included data from 978 instances with 46 attributes. Based on the extraction of attributes the most significant factors are acknowledged and ranking were applied for the key factors. From the figure 2 shows the ranking for the most significant factors that examine the education requirements and outcomes of disability students.

**Figure 2: Ranking for the most significant attributes**

#### V. CONCLUSION

The conclusion of this work predicts the result gives novel insight to the issues on the performance. In this selected mining technique method, achieved to get the affected factors of disability students. The attributes related to the disability students among 978 instances with 46 attributes examined and allocated the rank. This work concludes the factors with uppermost affected influence to the students. Based on the feature extraction method, the result shows the most significant variable that influence the special student education

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