DATA ANALYTICS IN HIGHER EDUCATION IN KASHMIR VALLEY-AN OVERVIEW

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Abstract:

Big Data provides platform to the higher institutions to use Information Technology as resources to improve quality of education and help students in achieving the high degree of completion, and to improve student the outcome. This paper highlights the big data attributes which are relevant to educational institutions and establish the factors to limit adoption and use of big data by for higher learning in institutions. This paper is to highlight challenges faced for implementation of Data analytics. The study has been done through a desk search and sources of literature including scientific research journals and reports have been thoroughly reviewed. Various Online journals found over internet were also viewed and examined using searching by Google Scholar. The paper concludes Big Data Analytics and its relevance in Educational systems with a view of helping instructional establishments in Kashmir valley to undertake Big Data Analytics.The paper recommends that academic establishments in Kashmir valley, to make investments in analytics programs and in developing expertise with a purpose to get price of large facts.

Keywords: Big Data, Real-Time decision making tools, Analytics, Higher Education, analytics program.

Introduction:

In higher education, Big Data Analytics can be the forerunner of transformation as against the earlier approach of using analytics to just determining individual and class performance.

The Information Systems (IS) in education is under tremendous pressure to address the growing social demands and global changes. For example, IS education must be adapted in all workplaces in order to embrace IT related skills and ability to innovate. Students' concerns about job availability impact their intentions to choose Information Systems as a major (Zhang, 2007). It is challenging for IS educators and researchers to respond effectively and in time to the social demands and global changes (Lasi et al., 2014; Daniel, 2015). Fortunately, the advancement of data analytics has brought unique opportunities for dealing with these rapid changes (Daniel, 2015; Nguyen, Gardner, & Sheridan, 2017).

The data analytics help to choose right information at a right time .The higher education is a vast area for the utilization of the analysis of data as it comprises of learner data,faculty data and administrative data Educational structures, together with learning control structures and path authoring systems, generate enormous datasets all through every day operation .Massive data generated by educational systems are becoming more and more available for collecting and mining. This immense amount of data has heightened the need for well-established data management and analytics in the learning and teaching environment (Siemens and Long,

2011; Greller and Drachsler, 2012; Nguyen, Gardner, and Sheridan, 2017). The educational datasets, specifically, contribute to the evolution of getting to know theories, learning help, getting to know layout, learner feedback, and the development of learning support systems.Pistilli, Arnold, and Bethune (2012) show the use of data analytics for improving student success by producing real-time feedback to students.

From the attempts to apply data analytics in education, new disciplines have emerged called learning analytics, academic analytics, and educational data mining. While all of these concepts are related to the use of data analytics in education, they are completely overlapping. Learning analytics focuses on the application of data analytic techniques and tools for purposes of understanding and enhancing learning and teaching, whereas academic learning aims for the purposes of supporting institutional operations and decision making. Besides, educational data mining focuses on the development and evaluation of data analytics methods for exploring educational data. As a newly emerged area of research and practice, a variety of terms have been raised and adopted t describes similar concepts and processes (Nguyen, Gardner, and Sheridan, 2018b). However, the clarification and consensus of these terms are not yet understood fully (Barneveld, Arnold, and Campbell, 2012; Nguyen, Gardner, and Sheridan, 2017, 2018b). Various disciplines have emerged as a result for the data analysis over education .The terms like Learning Analysis ,Academic Analysis (Barneveld, Arnold, and Campbell, 2012; Cooper, 2012 and education data mining (Zouaq, Joksimovic, and Gasevic, 2013; Baker and Inventado, 2014; Sin and Muthu, 2015)are well known. However their linkage has been researched several times by the researchers.

Objective:

Following are the specific objectives which guide the paper:

1. To highlight the attributes of data which are relevant to educational institutions.
2. To establish the factors to limit adoption and use of big data by for higher learning in institutions.
3. To highlight challenges faced for implementation of Data analytics.

Methodology:

This paper is based on a desk research .The articles, papers and journals accessed through internet using Google scholar ,Research gate and other online articles have been taken has the source of the information.

Need for Data analysis in Higher education in Kashmir valley

Many academic institutions are moving to cloud architectures and with the increased use of digital devices by users in these ecosystems is leading to a situation more data is being collected in these institutions than ever before, creating considerable opportunities for using Big Data to analyze and correlate information that enhance decision making(Marsh,O., Maurovich-Horvat, L., & Stevenson, 2014). Big Data presents to Institutions a good framework for efficiently utilizing the vast array of data in shaping the future of higher

education(Görnerup, O., Gillblad, D., Holst, A., &Bjurling, B. ,2013).For higher education, access to the data and the analytics allows for peer and internal evaluation. The higher education using data analytics can collect information about learners,educators to evolve the system of learning and give higher education a new edge.The educational system is increasingly coming under pressure to respond to economic, political and social changes such as the need to increase the number of students in certain disciplines, and training graduates with skills and attributes required by industry (Görnerup, O., Gillblad, D., Holst, A., &Bjurling, B. 2013).For these establishments to be responsive to those changes, it is vital that they use Information Technologies inclusive of Big Data which has sizable opportunities in better schooling. Educational information has in the beyond been accumulated through conventional tests mainly but is now an increasing number of being accrued through online academic structures, instructional games and simulations main to lots of data, which might be in turn growing possibilities for big data analytics...By using data analysis an institute can

1. Improve its branding by improving the ranking of the institution as the data collected can be used in policy and decision making.
2. In order to minimize the drop out ,the data analysis can be used for student retention.
3. Data collected can be used to save resources and time for institutional operations.

Kashmir valley consists of many government and non-government institutions under higher education which impart knowledge to the learners. The traditional way of teaching learning and process had earlier been whiteboard .But as per the growing needs of society and pressure by the Government department of higher education run by the government strictly puts higher institutions mandatory to have National Assessment and accreditation from the council for the ensuring quality education.

Factors and Implementation of data Analytics

Since the cost of Big Data and Analytic tools is coming down drastically, they are becoming easier to use. Therefore it opens the opportunities to use these tools by educational institutions to achieve better outcomes and efficient use of the resources. Expectations of accurate practices of duty via stakeholders and growing demands for proof based totally guidelines to aid selection-making are among the factors which are contributing to the emergence of Big Data in higher education. Therefore, we can say that finding technology that will help in big data analytics and the relevant technological skills for example data scientists is the initial step. This is because data can no longer be viewed as a back office accounts settling tool but rather a real time decision making tool that can be used by data scientists to derive useful information that would otherwise remain hidden in the terabytes of data (Drigas, A. S., &Leliopoulos, P. 2014).

The decreasing costs of big data storage, open source software such as Apache Hadoop, NoSQL databases ,network bandwidth and on-demand access to resources through cloud computing are bringing these complex technologies close to nearly everyone(Ohri, A. 2015). In addition with the growing pressure of society, economy the need for data analysis has increased .It has also being an important factor to its implementation.

The big data analysis is implemented on the following levels:

1. Administrators: it helps them to check Academic performance, provide efficient resource allocation and help and support ongoing efforts of the institutional up gradation.

2. Students: It helps students to provide feedback about their classes, studies, teachers and other administrative works and helps them in grasping learning platforms and likewise plan learning activities

3. Teachers/Lecturers: It helps them to helps students which face problems, improve their teaching methodology, and provide instance to student feedback.
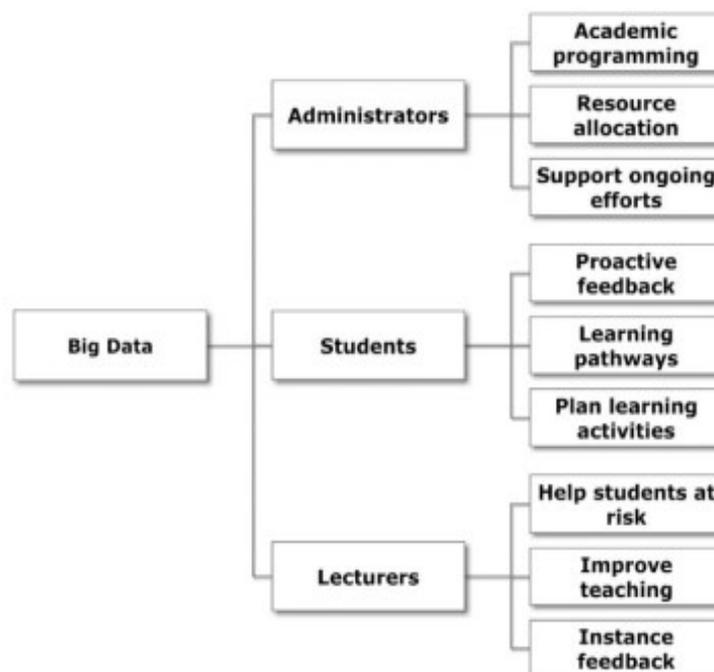

Fig1. Implementation of big data analysis at higher education Adapted from (Ben Daniel, 2014)

Challenges in The implementation:

There are various challenges for the use of big data analysis in higher institutions of kashmir valley .The biggest challenge is the knowledge of big data which is very less confined to the stakeholders of IT(Information technology) and the people in such field are less yet emerging. The second challenge is the collaboration and co-operation between different departments as it is an institutional work. Furthermore, most of institutional data systems are not interoperable, so aggregating administrative data, classroom and online data can pose additional challenges (Daniel &Butson, 2013). However, there is still a divide among folks that understand how to extract facts and what facts are available, and people who realize what facts are required and how it'd nice be used, all which make collaboration difficult.

Furthermore, as Romero and Ventura (2010) note, analytics has traditionally been difficult for non-specialists to generate (and generate in meaningful context), to visualize in compelling ways, or to understand, limiting their observability and decreasing their impact (Macfadyen& Dawson, 2012).

Conclusion:

This paper has explored Big Data Analytics and its relevance in Educational systems with a view of helping instructional establishments undertake Big Data Analytics. The paper has explored the attributes of large statistics which are applicable to educational institutions, the elements influencing adoption of big facts and analytics in educational institutions and checked out the elements hindering use of big information in those Institutions. Big Data is a ways greater than surely gathering information and generating reports.

It is a strategic useful resource that can be used to enhance academic high-quality. This paper recommends that academic establishments in Kashmir valley, to make investments in analytics programs and in developing expertise with a purpose to get price of large facts. Big Data allows reducing charges and enhancing education by using permitting administrators make decisions which might be more unique and presents instructors valuable gear to select from for an expansion of learning. The Big Data approach to statistics control will assist lessen problems associated with traditional facts evaluation; and this has the potential of enriching the schooling machine with new getting to know methods, and making choice making through policy makers more efficient and focused.

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