CHALLENGES OF BIG DATA THROUGH LEARNING ANALYTICS AND DATA SECURITY IN EDUCATION SECTORS

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Abstract
The aim of this research is to observe what the challenge through learning analytic is and also to identify the challenges that have in data security. This paper proposed framework of the challenges in Big Data through Learning Analytics and Data Security. It is to shows how the concepts converting into variables where the research would be more focus on. As a result, the more data was stored and analyzed by organization, more controls expected to address these worries. This paper is also expected to act as a medium to look for chances in establishing a better of Big Data widely all around the world.
Keywords: Big data, learning analytics, data security, stored, analyze controls.

1. Introduction

Now we are live in era technology, where we live in a world increasingly driven by data. But nowadays, data had been increasing rapidly because data was being produced consistently and this situation we can called it as big data. Basically big data introduced to the information and data which can't be dealt with, or on the other hand handled through current traditional software systems. Big data was large set arrangements of organized and unstructured information which needs be prepared by cutting edge investigation and representation systems to reveal concealed examples and discover obscure relationships to improve the decision making process (Nasser and Tariq,2015).

Institutions of higher education were working in an undeniably mind and aggressive condition. They were under expanding strain to react to national and worldwide financial, political furthermore, social change, for example, the developing right to expand the extent of understudies in certain development, installing work environment graduate properties and guaranteeing that the nature of education programs were both broadly and comprehensively significant. These data can have an important influence by the way we comprehend the regularly challenged nature of advanced education administration (Clarke, Nelson and Stoodley, 2013) thus guarantee that organizations were not just ready to react adequately to changes occurring inside and outside them, yet that they likewise stay applicable to their motivation in the social orders that they handle.

The aim of this study is to observe what the challenge through learning analytics is and to identify the challenges that have in data security. In order to achieve this objective, this research proposes a framework to determine knowledge management in Big Data that facing a challenge though learning analytics and data security. The

remainder of this paper is organized as follows. Section 2 is literature review. Proposed framework is in Section 3. Final section contains some concluding remarks.

2. Literature Review

This research is expected to analyze the factors that affect knowledge management practices in teleworking also its effect towards organizational performance. For the factors affecting knowledge management practices in teleworking, we focus on three main aspect; trust, workplace suitability and culture which are believed to be the leading factors that will influence the practice of knowledge management in teleworking, while the effect of knowledge management practices in teleworking to the organization are focused in terms of organizational performance

2.1 Learning Analytics

Big Data is a new field, where it appears when innovative technologies are combined with various techniques. The use of data mining and business intelligence software has been used in analyzing customers and products; this is the key to survival and organizational expansion in various sectors. Therefore, learning analysis is also used in the education sector where it is a large data group that involves students in measuring, collecting, analyzing, and reporting data on the progress of the student itself and the context in which learning takes place. By utilizing large data availability available around the digital footprint and student activities left by student activity in their learning environment, analysis of the learning helps us to bring our present data.

Table 1. Analysis review of challenges in Big Data though learning analytics.

Author	**Ethical guidelines**	**Learning environment optimization**	**Privacy and security**	**Data Collection**
Daniel (2015)				***/***
Avella, et. al. (2016)				***/***
Ferguson (2012)	***/***	***/***		
Meenakumari, Kudari (2015)	***/***		***/***	
Vatsala, Jadhav, Sathyaraj R (2017)			***/***	
Khalil, Ebner (2015)		***/***		

Learning analytics as a response to large data entry in education, learning analytics emerged as a growing field that involves the measurement, reporting, collection, analysis, and collection of data about learners and their contexts for the purposes to improve students' performance and assess the curriculum, program, and institution (Macfadyen et al. 2014). Learning analytics consists of consumption student data from a variety of sources. This enables organization or institutions support their students to make targeted interventions with a higher chance of success. Learning analytics is not simply at the service of existing educational institutions and educational methods. Many experts for learning analytics see the approach as a way of achieving transformational change in education.

2.2 Data Security

Big data utilization likewise raises issues around morals of information accumulation with respect to nature of information, protection, security and possession. It likewise brings up the issue of a foundations duty regarding making a move in view of the data accessible (Jones, 2012). Security and protection issues posture extra test to execution of big data in advanced education. During implementation of big data in the education sector there are also some of the challenges and one of them was data security. Based on Techopedia, data security alludes to defensive advanced protection parts that were connected to avoid unapproved approach to computer or PCs, databases and websites.

Data security additionally shields information from corruption. Data security was a fundamental part of information technology for associations of each capacity and sort. Data security otherwise called as information security (IS) or PC security. For examples of data security technology that advance backups, data masking and data erasure. A crucial of data security technology area was encryption, where computerized information, programming or equipment, and hard drives are scrambled and along these lines rendered garbled to unapproved clients and programmers. A standout among the most usually experienced techniques for rehearsing information security is the utilization of confirmation. With validation, clients must give a secret word, code, biometric information, or some other type of information to check personality before access to a framework or information was conceded.

Table 2. Analysis review of challenges in Big Data through Data security

Author / point	**Encryption**	**Threat**
Daniel (2014)	√	
TOLE (2013)	√	
Khan et al…(2014)	√	√

Toshniwal, Dastidar, Nath (2015)	√	
The Center For Digital Education (2015)		√

3. Proposed Framework

The figure 1 below shows about the proposed framework of the challenges in Big Data through Learning Analytics and Data Security. It is to shows how the concepts converting into variables where the research would be more focus on. This will help the researcher to narrow down the scope by focusing on variables that are more specific. From our literature review, we found two variables such as the learning analytics and data security that can be seen through the challenges. However, since it was too general, thus, we decided to emphasize on this two variables to smaller topic that are more detail based on this two variables, which is learning analytics challenges that can be seen through the learning environment optimization, data collection, ethical guidelines, privacy and security. For the data security, it focuses on two main challenges; it is data encryption and threat.

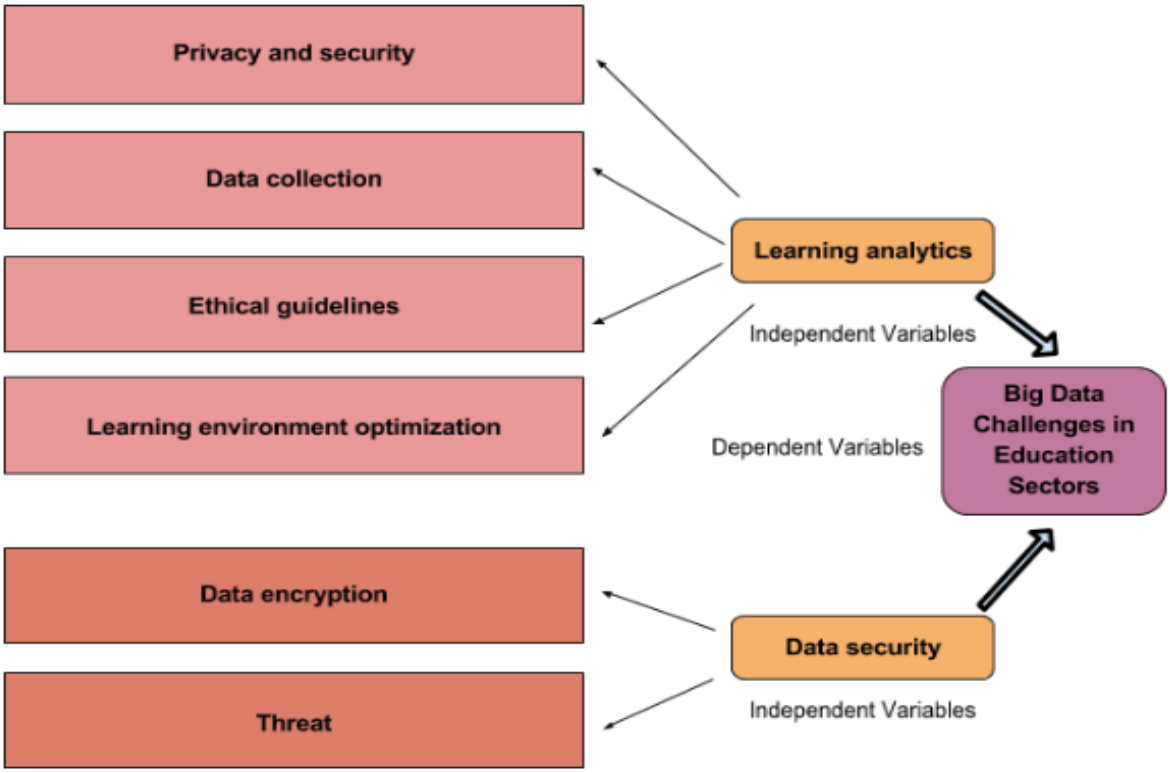

Figure 1. Proposed research framework

4. Conclusions

The power of big data is common things nowadays; it can be harnessed to revolutionize higher education system completely. For that, learning analytics has appeared as a significant area into technology-enhanced learning. Although this is a new area, it draws on extensive work in related areas and has already developed a range of methods and tools that offer exciting potential. But, the era of big data has just started and so, there are numerous challenges in front. These challenges do not just involve the obvious issues of scale, but also incompleteness, heterogeneity, lack of structure, error-handling, timeliness, privacy, and security. Due to growing interest in data and analytics, there is a need for improved the research techniques, methods, and tools. The inferential techniques that apply can provide a great insight into many complicated learning analytic problems, in many situations with exceptional accuracy and punctuality. The prediction about the problem-solving, decision-making, government administration and many things else could possibly be improved by analyzing data in better techniques. Big Data was changing the way we see our reality. The effect big data had made and will keep on creating can swell through all aspects of our life. Worldwide Data was on the ascent, by 2020, we would have quadrupled the information we produce consistently. From a security view, the primary matters of big

data were about encryption and threat to outsourced data. Therefore, additional research is necessary to solve the problem.

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