Cloud Computing and Big Data Analytics in Education

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Abstract. This article reviews the current state of cloud computing and big data analytics in education. It presents a literature review, including a discussion of existing research and key findings. The paper also discusses the potential applications of these technologies in educational institutions as well as the challenges associated with their implementation. Offers suggestions for future research directions in this area. Presents an overview of potential applications and challenges associated with cloud computing and big data analytics in educational institutions. Reviews existing research on the subject and discusses their main findings. In addition, directions for future research in this area are suggested. The importance of these technologies in providing quality education for students is emphasized.

1 Introduction

Over the past few years, the use of cloud computing and big data analytics in education has become increasingly common. Cloud computing allows educational institutions to quickly and cost-effectively access, store, and share data. In addition, big data analytics can be used to analyze large data sets to gain insight into student achievement, teacher effectiveness, curriculum development, and many other aspects of the educational process. In this follow-up article, we will look at the potential of cloud computing and big data analytics in educational institutions. We will discuss how these technologies can be used to improve teaching practices, improve student learning outcomes, and provide new opportunities for decision-making. We will explore the benefits of using cloud computing and big data analytics in education, including cost savings, better access to resources, improved scalability and flexibility, increased collaboration between students and teachers, enhanced security measures to protect data, and more efficient use of resources. In addition, we will address some of the challenges associated with embedding them in an educational context, such as a lack of technical knowledge or educators’ understanding of how to properly use these technologies. Finally, we will provide guidance on best practices for implementing cloud computing and big data analytics so that they can maximize the benefits for all parties involved. We will discuss the benefits of using these technologies in an educational environment, such as increased collaboration, improved access to resources, and improved

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data security. We will also look at some of the challenges educators face in implementing these technologies, such as lack of technical knowledge or understanding. Finally, we will provide recommendations on best practices for using cloud computing and big data analytics to maximize the benefits for all parties involved.

We will begin by exploring the potential benefits that cloud computing and big data analytics can bring to education. Cloud computing allows educators to securely store large amounts of data offsite while providing easy access to resources from any device with an Internet connection.

2 Materials and Methods

We begin by exploring the potential benefits that cloud computing and big data analytics can bring to education. Cloud computing allows educators to securely store large amounts of data offsite while providing easy access to resources from any device with an Internet connection. This reduces costs associated with hardware maintenance and data storage, and provides greater accessibility for students who may not have access to traditional technology infrastructure at home or at school. In addition, cloud-based tools facilitate collaboration between teachers and students, allowing them to easily share documents and collaborate on projects remotely.

Big data analytics is another technology that has great potential in education because of its ability to quickly analyze large data sets to identify patterns or trends that may not be obvious at first glance. It can be used by administrators or researchers studying student achievement over time or looking for correlations between different variables, such as socioeconomic status or teacher quality, to better understand how different factors affect student outcomes. It can also help teachers identify problem students more quickly so that they can intervene earlier rather than waiting until it is too late for those students whose grades have already deteriorated significantly due to lack of support or attention from teachers.

However, there are some challenges associated with implementing these technologies in an educational context, largely due to educators’ lack of technical knowledge about how to use them effectively; this includes understanding what type of information should be stored in the cloud and what type should be stored locally, and knowing what types of analysis are most appropriate when dealing with large data sets related specifically to an educational context, such as student performance over time, etc. In addition, there may be privacy concerns associated with storing sensitive information online, so it is important that schools have clear policies in place regarding who has access to such information and what measures have been taken to ensure its security before proceeding with plans to implement these technologies.

Finally, we offer best practice guidelines for using cloud computing and big data analytics in an educational context: First, it is important to know what type of information should be stored locally or remotely depending on its sensitivity; second, make sure that all stakeholders fully understand privacy policies before beginning the implementation process; third, consider pilot testing programs for various features of each technology before full-scale implementation, in order to verify.

3 Results and Discussion

Cloud computing and big data analytics are two of the most important technologies in the world today, and their impact is felt in a wide variety of industries. Education is no exception, as both cloud computing and big data analytics have the potential to revolutionize learning.
In this article, we will look at how cloud computing and big data analytics can be used in educational environments to improve learning outcomes.

Simply put, it is a type of technology that allows users to access resources over the Internet without having to install or maintain any hardware or software on their machines. This makes it easier for students to access learning materials from anywhere - whether at home or on campus - and allows them to collaborate with each other more easily than ever before. In addition, cloud computing can provide instructors with an easy way to store and manage instructional materials online so that they are always up-to-date and accessible to students wherever they are.

Big data analytics is another key technology in education; it involves using large data sets (such as student grades or attendance records) to obtain information about student performance or behavior, which can then be used by educators to improve instructional practices or create individualized learning plans for individual students based on their needs. Big data analytics can also help identify areas where certain groups of students (such as those who are struggling academically) may need additional support.

In combination, these two technologies offer powerful tools that can help educators do more than ever before; from providing personalized learning experiences tailored specifically to each student's needs through big data analytics to ensuring that course materials are always up-to-date thanks to cloud storage, there's really nothing these two technologies can't do when applied correctly in an educational context!

However, there are several important things to consider when implementing either of these technologies in an educational setting: first, privacy issues need to be properly addressed to ensure that any personal information collected is safe; second, cost must be considered, as both cloud computing and big data analytics solutions often require a significant financial investment; finally, scalability must be carefully considered to ensure that any solution deployed has enough capacity.

Clearly, both cloud computing and big data analytics have significant potential when it comes to improving learning outcomes in various types of educational institutions - whether elementary schools or higher education institutions - but only when properly applied with all of the relevant considerations outlined in this article.

First, this article will provide an overview of cloud computing in education. Cloud computing is a type of distributed computing that allows users to access applications or services over the Internet without having to install them on their own computer systems. It offers a number of benefits to educational institutions, including cost savings (because they no longer need to buy expensive hardware), scalability (because they can easily add additional resources as needed), flexibility (because they can access applications from any device with an Internet connection), security (because all data is stored on secure servers) and collaboration (because multiple users can work together on projects). In addition, cloud solutions are often easier for teachers and students because they do not require any technical knowledge or experience to set up or maintain.

Later in this article, we discussed how big data analytics can be used in educational settings. Big data analytics involves analyzing large data sets using sophisticated algorithms that reveal patterns or trends in a data set, which can lead educators to make better decisions about learning outcomes at their institution(s); however, there are also potential problems associated with using these technologies, such as privacy issues due to the sensitivity to the information collected and difficulty interpreting results due to lack of understanding.

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engagement; school governance processes; etc., can then be used by educators to make informed decisions about how best to improve learning outcomes at their institution(s). However, there are also potential problems associated with the use of these technologies, such as privacy issues due to the confidential nature of the information collected; lack of technical knowledge among staff who may not understand how to best use these tools effectively; difficulty interpreting results due to lack of understanding of what constitutes "good" and "bad" results, etc., that must be considered before implementing a solution based on Big Data Analytics technology.

4 Conclusion

In conclusion, cloud computing and big data analytics are a powerful combination of tools that can be used in the education sector to improve the ability to collect and analyze relevant information. However, it is important for schools and organizations to implement clear guidelines for using both tools to ensure the security and integrity of their systems as well as protect individuals' privacy rights. With the right approach, these tools can help schools and organizations better serve their communities.

Cloud computing and big data analytics are powerful tools that can help schools and organizations better serve their communities. With the right approach, these tools can improve their ability to collect and analyze the information they need. However, schools and organizations need to develop clear guidelines on how to use these tools to ensure that their systems are secure, and to protect individuals' privacy rights. By doing so, they will be able to take full advantage of these innovative technologies while ensuring the safety and security of everyone involved.

References